

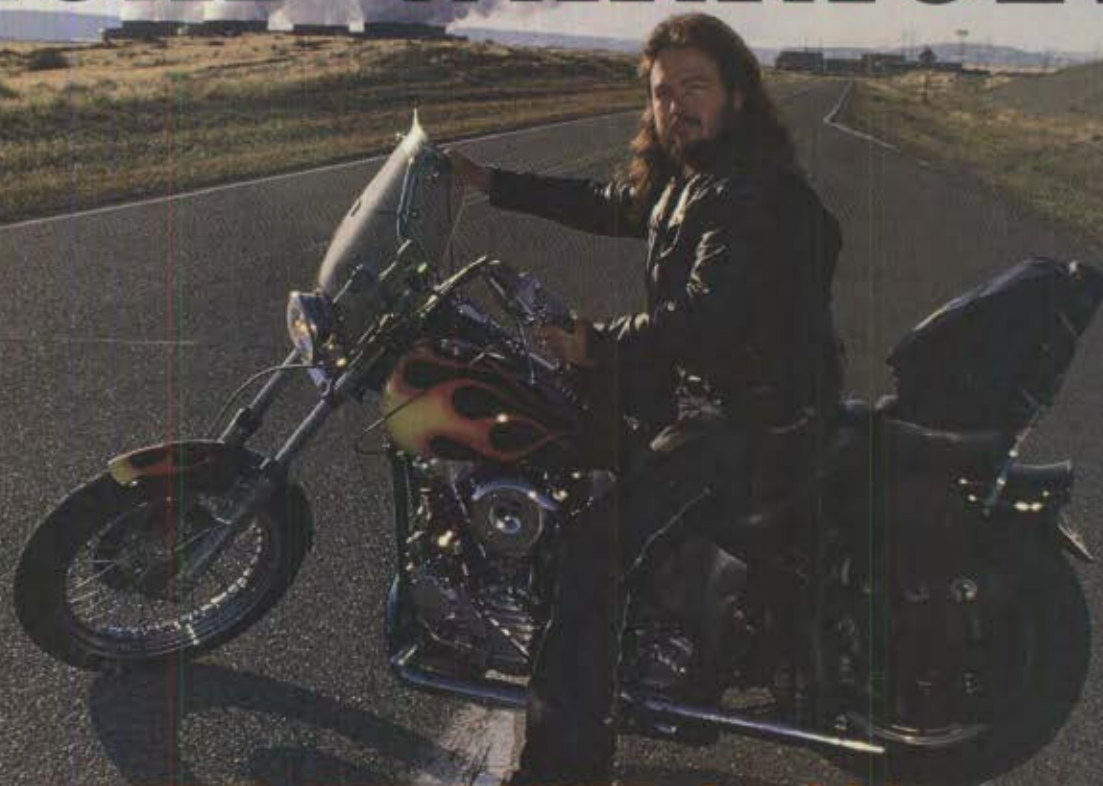
"BEST NEW COMPUTER MAGAZINE OF 1993" Computer Press Association

NOVEMBER 1994, VOLUME II, NUMBER 11  
OS/2 FOR CORPORATE AMERICA



PROFESSIONAL

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## SPECIAL REPORT

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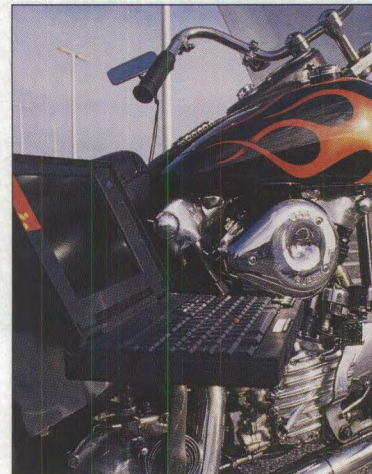
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THE MAGAZINE FOR OS/2 PROFESSIONALS

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**Administrative, Editorial & Production Offices:** Edwin Black, Publisher and Editor-in-Chief, Alan S. Kay, Executive Editor, Margaret M. Dutcher, Assistant Publisher, 172 Rollins Ave., Rockville, MD 20852, Phone: (301) 770-3333, FAX: (301) 770-7062.

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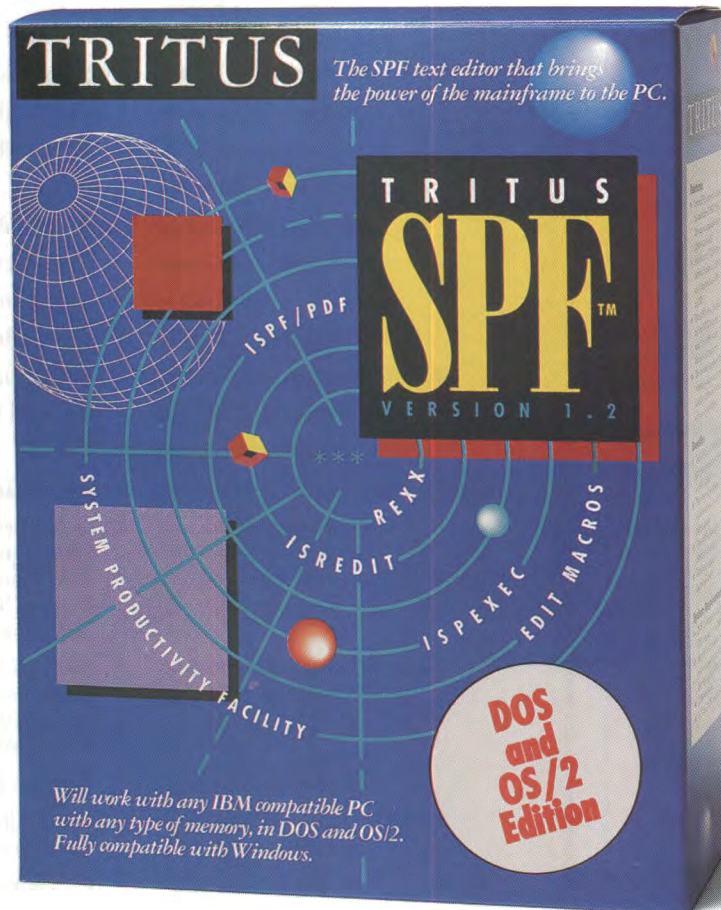
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# Launches and Lurches

**R**eactions are still coming in as this is being written just a week after the worldwide launch of OS/2 Warp. It was one thing to write about the Warp launch plans before the fact, as we did last month, but it's another to experience the extravaganza. It was an impressive launch.

For those who missed the festivities, it was a fun and awesome event. The main launch was at the Richard Rodgers Theatre on Broadway, with the event televised to dozens of cities across the country, and many in other nations.

"Time" was the Warp theme, supported by funky music and stage props. Leonard Nimoy narrated a spectacular, multi-screen presentation about wasted time—from the years people spend in lines to the months they spend searching for lost items. And then he asked if people were willing to wait seven more months for a 32 bit operating system when one is available now.

PSP President Lee Reiswig "beamed down" to the stage a few times (just smoke and flashing stage lights). A demonstration by Reiswig and IBM marketing director Wally Casey showed point-by-point with chuckles and hard-hitting comparisons why OS/2 is superior to the Chicago product that ain't here yet.

A wild David Barnes video filmed around the world showed how OS/2 is saving lives in remote Kodiak, Alaska, keeping an airline running on time in Sweden, and operating an ATM network in Moscow.

At the end, to blast the competition for real, IBM actually rolled a giant Microsoft-style hourglass onto the stage and exploded it, releasing thousands of foil OS/2 Warp labels (along with a few plastic shards) to float across the audience of reporters and computer industry heavyweights.

More than 100 reporters and consultants attended each major launch site: New York, London, Munich, Sydney. Hundreds more attended the local launch sites around the world. In fact, *OS/2 Professional* and *OS/2 Express* were represented in 20 American cities.

IBM snared major broadcast coverage on CNN, Fox, CNBC, and numerous local TV stations. Major print coverage included

the *New York Times*, *Wall Street Journal*, *Los Angeles Times*, the main wire services, and virtually all the leading computer weeklies.

Big Blue is getting smarter about promoting OS/2. A measure of just how smart is that the company is trying so hard to effectively market, advertise, and publicize its product in time for a massive distribution campaign—standard procedure for most companies, but revolutionary for IBM.

To help IBM sense how well it is doing, *OS/2 Professional* is running a survey in our October, November and December issues, seeking reader input on how much they are seeing and hearing about the 90-day initial Warp campaign and how that will trans-

late into a purchase decision. In this issue, turn to page 76. Readers are invited to answer every month because we're trying to gauge the ups and downs as the campaign unfolds.

Part of the problem with IBM's reform movement is that while some in the company are trying their damndest to promote OS/2 by land, sea, and air, some senior executives are still trying to handcuff the good news. For instance, a recent memo from Reiswig inspired by JoAnn Sager, PSP's public relations director, demanded that all press contacts be limited to those encounters approved in

advance by the press department.

Two steps up and three steps back—that's been the IBM chacha for years. Just when a product is on a roll, the control freaks are let loose. It's time to bury all this stuff about the media. You can't complain about lack of coverage and then make it difficult for the media to tell your story. *OS/2 Professional* is successful because we're willing to go to extraordinary lengths to get a story on our home turf. But many reporters, such as Wayne Rash and Jerry Pournelle, maintain they are treated so poorly, they often give up in frustration. We know their frustration and have done our part to try to wise IBM up.

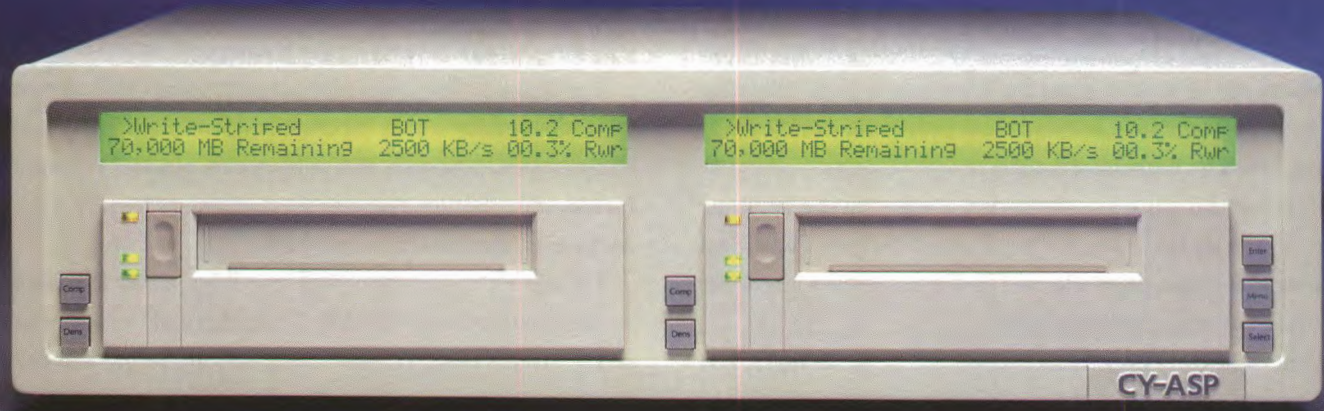
Thanks to some magnificent staging and timing, IBM now has a chance to gain a genuine advantage for OS/2. Don't blow it, guys. Be helpful. And Austin, be nice. ♦

*Edwin Black*





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*Comments, criticisms, and observations*

## Timely e-mail

I really enjoyed your article on *E-mail and OS/2* [Special Report, September]. It came just when I needed it. Thanks for getting together all the information I needed to know but could never find the time or resources to put together. It's a keeper.

**Sally deVincentis**  
via CompuServe

## Who's to blame?

Why doesn't anyone ever blame companies like Lotus and Computer Associates for the depressive situation of OS/2 office applications?

While the market could be ready for the success of true OS/2 programs, the creation of the so-called "OS/2 versions" of Lotus's and CA's Windows apps—with the same exact look and feel, and maybe a little less efficient and up to date—is a useless exercise. Why is it still necessary to even mention it? Windows programs already run just fine under OS/2.

Why should one bother to go native if all that can be obtained is the same old Windows 3.1, CUA '87 interface?

It is not difficult to predict that the same guys will quickly join the ranks of those who go around complaining that it is impossible to make a profit from OS/2 products unless they're fully paid by IBM. They should blame themselves instead, or even better, take a second look at examples of what WPS applications could be, like MIMPM/2 or cc:Mail for OS/2 (a remarkable exception in the landscape of present Lotus OS/2 apps), or even many shareware utilities.

**Stefano Sutti**  
Milan, Italy

## The driver dilemma

I'm a big fan of OS/2 and *OS/2 Professional* but recent trends have made me more than a little worried. First, when I downloaded the Warp 2 beta from CompuServe I was pleasantly surprised at how fast it was. I didn't expect such a big performance boost.

The drivers provided for the ATI Mach32 graphics accelerators were less

than impressive, however. More to the point, they are downright brutal. I originally purchased an ATI card for its reputation of reliability and performance and it met with my satisfaction under OS/2 2.1.

The new drivers, on the other hand, fail miserably—I am unable to get a full-screen DOS session to appear. I contacted ATI and they responded with a "We don't support unreleased products." Well, when I wrote ATI, Warp was announced as an Oct. 11 release—and this was just one short month away from it being a released product. Would they support OS/2 then?

I contacted IBM through the PSP Beta forum on CompuServe and received a polite, "Not our problem; talk to ATI." I couldn't believe what I was hearing! If IBM cannot get a powerhouse graphics company like ATI to make dependable OS/2 drivers, can OS/2 really survive? What does that say for people who don't have a well known, well supported graphics card installed on their machine: "Sorry, but no OS/2 for you!"

I fear for the future. I don't want Chicago. Tell me all is not lost.

**Michael Zanette**  
via CompuServe

## On Q

I would like to know what Q4 and Q1 refer to. In the Sept. 1994 issue, Edwin Black's memo is titled *On to Q4*. On page 51 there is another reference to your Q4 distribution on your subscription conversion campaign.

**Tom Schill**  
via CompuServe

*Our apologies for the enigmatic shorthand: Q1 and Q4 refer to quarters of the year, a usage commonly found in businesses' front offices. Q1 is the first quarter of the year; Q4 is the fourth quarter.—Alan Kay*

## Appellation infatuation

The letter from Jon Prial [September] probably sums up IBM's most serious problem: infatuation with overly verbose appellations for almost everything.

An outfit that hides its best products under names like "Workgroup Solutions Products," "Visual Document Library," and "ImagePlus VisualInfo" ought to send its senior personnel to journalism school for a few weeks to learn how to communicate using short, declarative terms. And "Document Solutions Marketing" could probably use a less flowery name as well.

**August Miller**  
via the Internet

## Typo trouble

After reading your review of *Dvorak's Guide to OS/2, Version 2.1* [Bookstax, May], I went out and purchased a copy. While I agree with your review that the subject matter covered is extensive, I was very surprised and disappointed at the number of typos, and in some cases, incorrect information, contained in the book. The book contains repeated or incomplete sentences, incorrect syntax for some config.sys parameters, and missing punctuation, making some sentences difficult to read.

With a list price of \$45, and considering the experience of the authors, I would expect a more polished product. I became so annoyed with the repeated occurrences of these errors that I finally returned the book for a refund.

**Joe Frank**  
Summit, New Jersey

## Help for ICSS

I loved your article on Bloodhound [Feature, July]. Some other programs need help as well. The big one is ICSS for OS/2. IBM Continuous Speech Series/2 is the best speech recognition product I have ever used. I use it on a 486/66 and it works 95 percent of the time, with any user. I also use Quikswitch with ICSS. It's great to just say "window" and the OS/2 window is opened, and then to say "desktop" to get back to the desktop. You can do all this in OS/2, WIN-OS2, or DOS. Since speech is the wave of the future, IBM should get on this. This



## INPUT

could be just the package that sells OS/2.

The ICSS developer toolkit cost me only \$79. But the big thing is that no special hardware was required—just a Sound Blaster supported under MMPM/2.

Quikswitch said they tried to get a package together that just sold the run-time for ICSS, so that everyone could use Quikswitch without buying the full blown version. But IBM turned them down. What? IBM had nothing to lose and could have made some money. Go figure.

**James McCann**  
via the Internet

### Peer OS/2?

You made a passing reference to PSP's peer to peer beta in the September issue [*E-Mail and OS/2, Special Report*]. I find it sad that the beta forum on CompuServe has been open

since January, but no one is listening. All messages seem to go unanswered. Repeated pleas from numerous parties requesting to join the beta have been ignored by IBM.

This makes IBM's neglect of Bloodhound look benevolent. At least you could order SearchManager/2, if you knew about it.

What's going on? Does Peer to Peer OS/2 really exist? If so, why is the beta forum neglected? If not, why does the beta forum exist?

**Mason Warren**  
via the Internet

### IBM means business

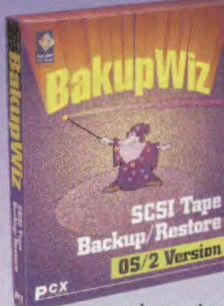
I would like to respond to William Zachmann's last column, *Clearing the Runway* [Zachmann's View, September] and some of his observations about IBM.

Zachmann's comments about IBM's apparent low levels of support for OS/2

fail to take into consideration all the other platforms and operating systems that IBM provides to the global business community. IBM supports a wide variety of mainframe, midrange, RISC, and PC platforms. They also provide support for a large number of custom-built and older equipment, plus one or more operating systems for each of these groups.

I would like to remind Mr. Zachmann that IBM stands for International Business Machines. His contention that IBM should throw the entire weight of its \$60 billion company behind one product is a nice dream, but not very practical on a global economic scale. Their primary mission is business computing. While OS/2 is a fabulous operating system, and it does have an extremely important role in that mission, it is not the starring one.

**Walter J. Dunz**  
Overland Park, Kansas ◆




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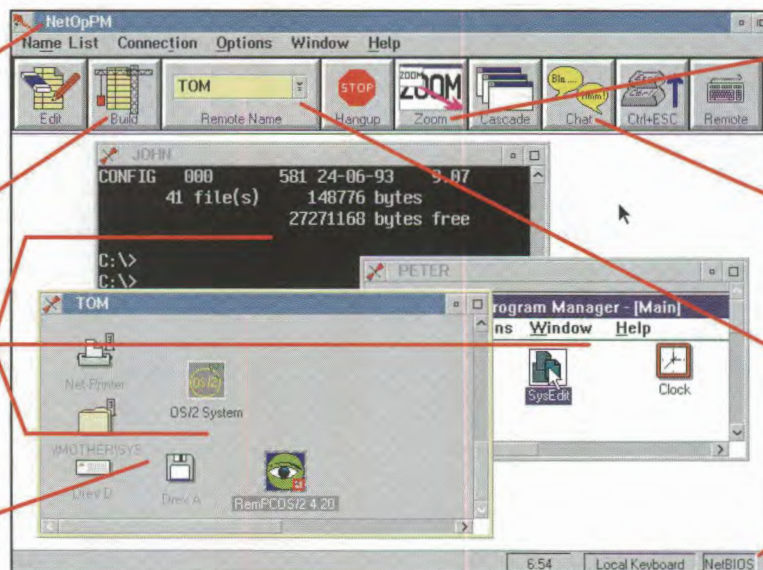
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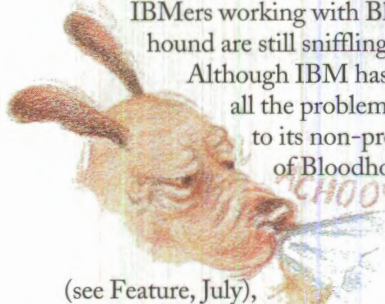
# BYTES & PIECES

News and trivialities, important and obscure

## Bloodhound still sniffing

IBMers working with Bloodhound are still sniffing.

Although IBM has explored all the problems relating to its non-promotion of Bloodhound



(see Feature, July), and is sincere about correcting them, inbred non-promotion at IBM still plagues the product.

For example, IBM recently released SearchManager/6000, the RISC version of the potent desktop text finder, also known as Bloodhound/6000. Bloodhound/6000 offers a GUI for both novice and expert users on either an AIX Motif, OS/2, or Windows 3.1 client. And the Bloodhound/6000 server can be integrated into even the most complex existing environments. Yet, when the product became AIX-available, IBM issued no press release, called no reporters, and in general followed its original pattern of promotional neglect.

Bloodhound has distinguished itself as a dynamic desktop tool. But on a LAN, Bloodhound empowers its corporate owners with broad text management capabilities that many lawyers, product managers, and customer service representatives only dream of. *OS/2 Express* is currently the only source outside of IBM selling Bloodhound, shipping about 50 per month. In its best day, *OS/2 Express* sold 17 copies. Indeed, *OS/2 Express* working alone sold more copies in its first month than IBM did in its first eight months.

By failing to promote Bloodhound's availability on RISC 6000 systems, IBM continues the same approach it now so ardently seeks to reform.

## DeScribe backs off expiration scheme

In the face of an outpouring of anger from OS/2 users, DeScribe Inc. has changed its policy of supplying word processor code that must be

renewed every six months.

The short-lived expiration policy was laid out in a letter included with copies of DeScribe 5.0. The letter declared that the company "has taken major steps to protect its intellectual property rights," and that it had encoded into the software an expiration date. Registered customers would be sent free "Extended Expiration Date disks" at roughly six month intervals.

According to the letter, signed by CEO and Chairman Jim Lennane, the intent of the process was to discourage piracy, and also to simplify the distribution of bug fixes. But the new policy enraged segments of the OS/2 community. Angry OS/2 users expressed their feelings to the company and on on-line forums and discussions. Among those voicing opinions to Lennane was *OS/2 Professional*.

On Oct. 4, DeScribe declared that "as a direct response to valid customer concerns," it would modify its expiration date policy. The statement said that although the company would continue to ship its executable with an expiration date encoded, users will be able to get "Unlimited Expiration Date" disks by submitting signed license agreements.

In commenting on the storm of controversy it ignited, DeScribe noted, "Among the e-mail messages were many valid criticisms as well as a number of proposed alternatives. DeScribe is considering these alternatives as protection for future product releases. However, DeScribe will submit future ideas to open debate before implementation."

## Texas Talk

At this time last year, Tom King, then an assistant district attorney in Galveston, Texas, was prosecuting a 14-year-old boy for capital murder. A guilty verdict came back on Friday, and "by Monday," King recalls, "I was on the air."

With his career in law well behind him, King now



hosts CompuTalk, a radio call-in program billed as "the world's source for geek-free computer radio." And while the Houston-based program airs but once a week on AM station KPRC, it has managed to attract a local following. Plans are being made to move to a two-hour format later this month with the hope of going statewide and then national—"before," as King puts it, "Windows 95 does."

Looking to capitalize on the country's new found love for computing, King's appeal lies in his straightforward, layman-like approach. "Anyone who calls," he explains, "gets free software, unless," he qualifies, "they say something geeky," a term he often applies to individuals who converse only in technobabble.

At 31, and with no prior radio experience, King is learning a thing or two about talk radio. "When I first approached the station with the idea," he says, "I spoke to a sales rep," whose response was hard to gauge. "Three weeks later, though, they called back and said you're on next month."

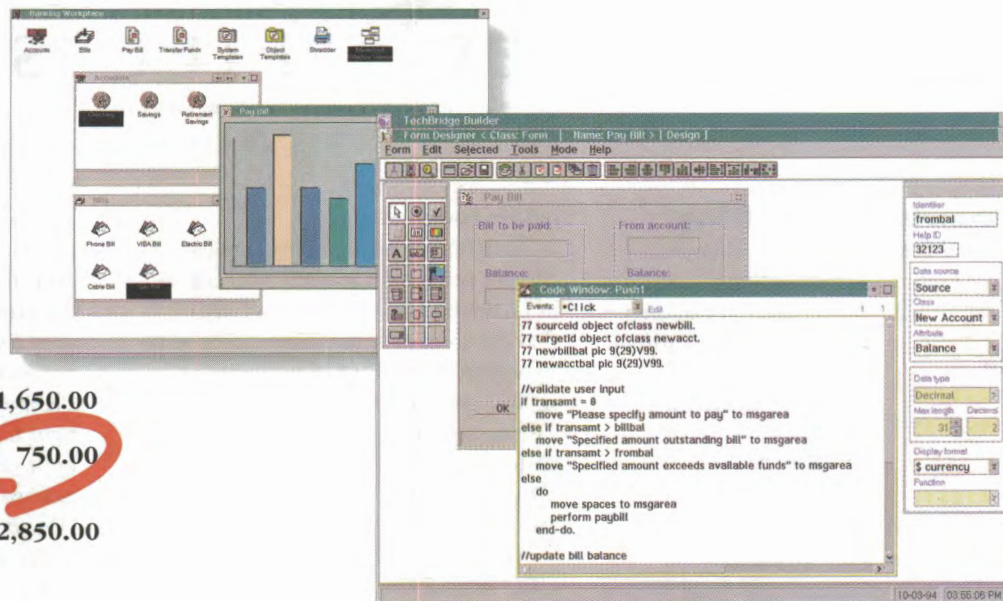
Puzzled because he had yet to meet anyone from the station face-to-face, King inquired, "Don't you want to meet me first?" The reply was telling. "No. Just bring the money." And so he did. It took roughly \$6,000 in start-up capital to launch the show. "For the first six months," he recalls, "I didn't have a computer. I had to sell it to raise the cash."

Still in its first year and heard only locally, CompuTalk is currently sponsored by IBM, Borland, and Advanced Micro Devices, with plans for a fourth sponsor, likely Delrina, in the works. King, who is a contributing editor to *Texas Computing Magazine* (formerly *Computer Currents*), has been talking with IBM about taking the show national.

That's right, syndication and King couldn't be happier, though he's quick to note that they're still just talking. Asked why IBM and not some other company, King pauses for a moment before replying, "They love the fact that they'd be in Compaq's back yard." ♦



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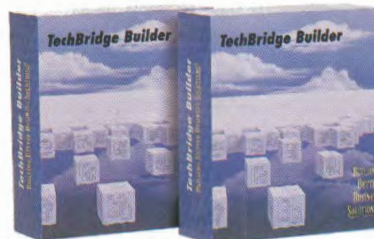
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# Clearing Customs

BY BRADLEY D. KLIEWER

**B**y its very nature, OS/2 creates a more productive work environment for its users. Multithreading and direct links to the operating system features (in the form of APIs) have made native OS/2 programs more efficient than comparable DOS and Windows applications. And users are beginning to appreciate the drag and drop features of the Workplace Shell and the object oriented technology that makes it work (the System Object Model, or SOM).

This productivity comes at a price. Over the last two years developers have had to rethink their development strategies and redesign their applications to take advantage of multithreading and SOM—issues that most Windows vendors will not face until next year. Native applications are only now beginning to show the level of stability and maturity that we find acceptable in mission-critical applications.

Thus far, vendors have focused their attention on basic features such as multitasking and 32 bit memory management at the expense of Workplace Shell integration. It's been an effective strategy: without a stable foundation, even the best interface suffers. We can look back to the ill fated WordPerfect for OS/2 for evidence.

Lotus and DeScribe, by comparison, first designed and tuned the word processors to a multithreaded 32 bit environment. As a result, companies like Lotus, DeScribe, and Mesa (developer of the Athena spreadsheet) currently have a technology lead, and will until Windows 95 developers learn the hard lessons of 32 bit multithreaded development. The pun is irresistible: there will thus be a Window of time during which OS/2 vendors must extend their lead to other areas such as WPS integration with SOM. The OS/2 community must continue a tradition of shipping technology that has yet to arrive on the Windows platform.

Chicago, now Windows 95, is the multithreaded 32 bit operating system that will be positioned as the successor to Windows. It will in turn be succeeded by the object oriented Microsoft OS

code named Cairo. To get to Chicago, all you need is for your flight to land. But to arrive in Cairo, you must first clear customs. And it is the customs, the conventions that govern access, that must solidify before any object based system, including SOM, can achieve its potential.

While we wait for Cairo, OS/2 has already begun working through its customs. Most of us know how to drag an icon between folders to move or copy an object. Likewise, the convention for loading a file object into a program is fairly well estab-

lished: simply double click on the file or drag it to the application. But how do you move a document from the application back to an operating system resource?

For example, have you ever tried faxing a document from within an application? You can, of course, follow the tried and true method: go into the menu to select Printer setup..., choose the fax output device, go back to the menu and select Print. (Then, after you've printed to the fax modem, go back in and reverse the printer setting.) And you can, if you or your support staff have the programming skills, write a macro that automates the

process and then assign the macro to a key combination or button. This procedure works whether you use Windows or OS/2. It also requires better-than-average computer aptitude to implement.

SOM promises an easier, more consistent and familiar method: just drag the file onto the fax machine. So you open a folder and drag the document from the folder to the fax. Your word processor fires up, configures itself for the fax, prints the document, and closes. Next, the fax application prompts you for a destination, you select a pre-programmed option (or manually type a phone number), and off it goes.

The process really works—somewhat amazing, considering the number of hoops the document must jump through to get to the fax. But how many times do you fax an existing saved document? Faxes are handy because they are immediate. You sit down,





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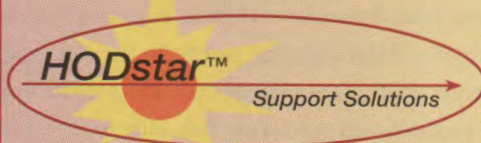
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## THE WIZARD OF OS/2

whip off a note to Sandy emphasizing the need for 15 widgets ASAP, and pop it into the machine. So you've just written the note using your word processor, and it's right there on the screen—what do you drag to the fax icon?

If you typed the note using the IBM Works word processor that ships in the v3 BonusPak, grab the icon the word processor provides for drag and drop operations (a somewhat strangely located icon that looks like a miniature document) and drag it to the fax. It will fire up the way it's supposed to.

On the other hand, you can try it from Ami Pro. According to the Ami Pro documentation, you should drag the icon from the left corner of the word processor's window to the fax application. But if you do, your results will vary depending on which version of OS/2 and which version of Ami Pro for OS/2 you use. Nothing might happen. Or you may first have to open the fax window and then drag the Ami Pro icon into that rather than onto the icon. In either case, if something happens, that something may be a printed page from your printer. Not the fax—the printer. Somewhere along the lines, the signals get crossed and Ami Pro sends everything to the default printer.

If you're using DeScribe, don't even bother trying. DeScribe does not support drag and drop from the application to a printer device. The developers say they intentionally avoided drag and drop support to avoid font confusion. If you have a unique font available on one printer (such as an Old English-style Postscript font) and drag the document to another printer (such as a dot matrix) without the font, the resulting page may not look anything like the view you see on screen. I'm not convinced that the gain in consistency is worth the loss in efficiency. Admittedly, though, I might feel otherwise if I were at the other end of the support line trying to explain printing discrepancies.

Despite these kinks, most existing native OS/2 applications have put SOM integration to effective use. You need only link a spreadsheet into your word processor or drag a copy of an image file into a document (Ami Pro) or frame (DeScribe) to see examples of SOM in action. SOM is not broken; its implementation simply needs refinement.

With a little cooperation, vendors and customers can work to ensure that native OS/2 applications maintain a productivity edge over their Windows counterparts, and will be able to establish workable standards that other less experienced vendors can follow. Hopefully, by the time the tourist crowd arrives, we will have already cleared customs, enjoyed the object oriented scenery, and moved on to productive work. ♦



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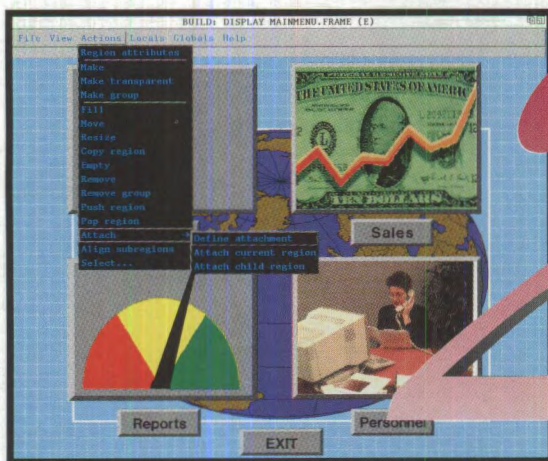
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SPECIAL REPORT

# THE WARP SPEED

As pressures increase to function effectively on the road, real and virtual, IBM comes up with a better way to travel.

BY JOHN BATTELLE

**C**omputers are *tools*, dammit! A few years ago we might have debated the extent to which they're tools in a new-paradigm toolbox, but that's yesterday's bar talk. Today, no debate—they're tools for doing a particularly '90s job of work: grabbing hold of a section of the rocky, pitted, but fast moving infobahn as you and it intersect, shaping and redirecting it, then sending it on its way, with *your* value added.

The shop teacher at school made a point of the sharpness of your tools. It's been a while, but the point, if you will, still holds. One of the things you use your tools for is to carve handholds into the cliff you're climbing—why work harder than you have to?





# ROAD WARRIOR

That's why you use OS/2. That's also why you're a road warrior: because the more usable work time you have, the better you'll do. And that's why you're about to go for a ride on the next paradigmatic roller coaster: you're about to become a Warp-speed OS/2 road warrior.

## Sweet Sixteen

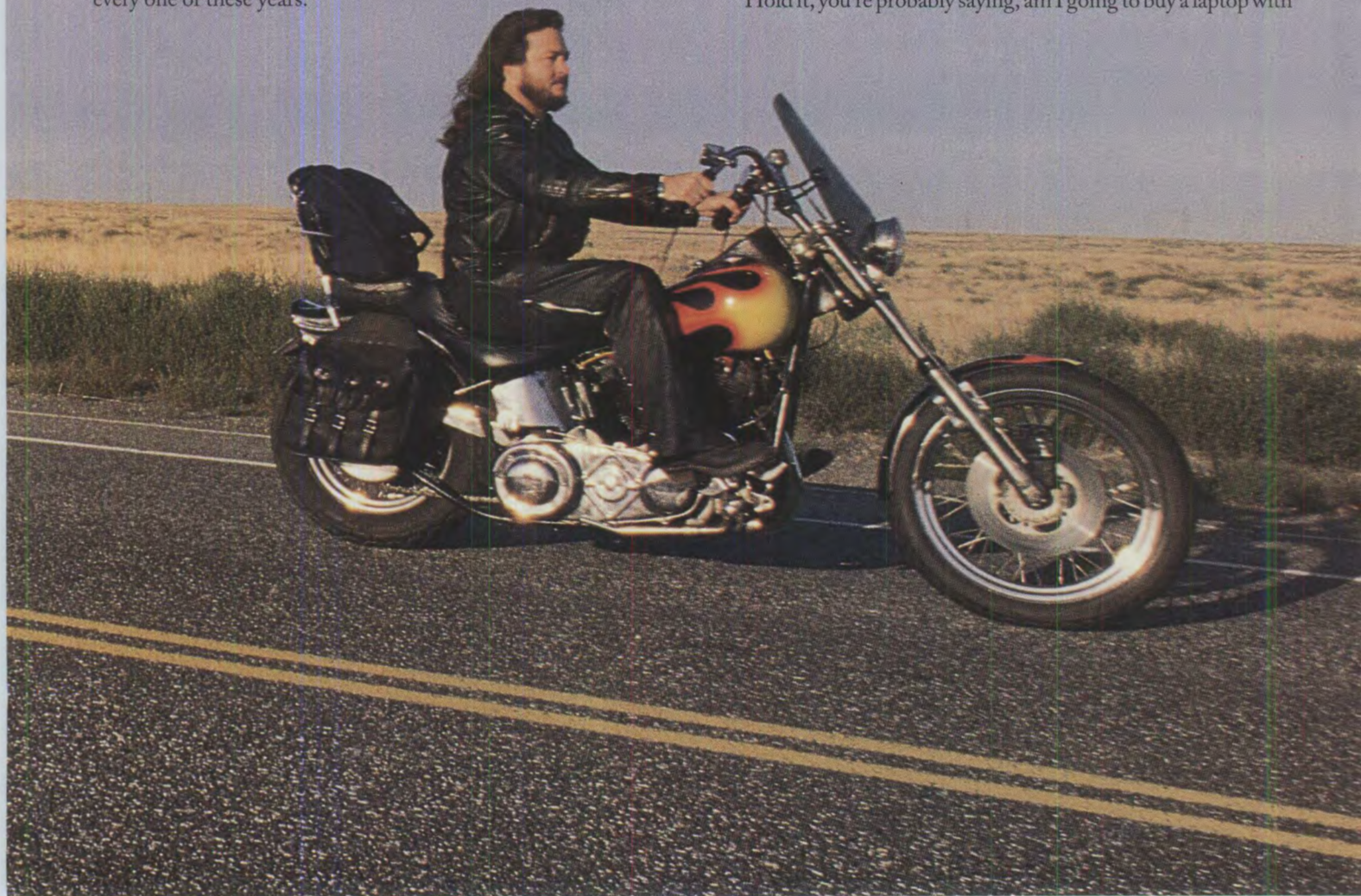
Pop your head up above your PC for a minute and take a look at the office calendar. You have one month left to 1994—one month before the personal computer turns sweet sixteen. That's right, bub, that's 16 years worth of evolution sitting on your desk—a sophisticated, sleek, 32 bit testament to Moore's law, the constantly revalidated fact of silicon life that says the amount of information squeezed onto a given size chip has roughly doubled in every one of these years.

So why are you still lugging around last year's portable, a blunt tool that allows you plenty of time to catch up on the Hollywood gossip as it boots up, and can double as a workout weight?

Time to get a life, Road Warrior. The world may be getting smaller, but you still have to fly coach and stay at the Marriott to get there. If nothing else has gotten noticeably better, though, the competition has. So along the way you have to work as if that sleek machine back at the office is at your instant beck and call.

It takes a while for technology to catch up with reality (and even longer for hotel rooms to catch up with your needs), but this may just be your lucky year. You have to get a new laptop, right? You may as well get one that you can use—an office system for your virtual office.

Hold it, you're probably saying, am I going to buy a laptop with





## SPECIAL REPORT

early adopter specs—hundreds of megs of storage, 16 megs of RAM, color monitor, and a processor that makes a Mac look like a ten-year-old Volvo? I run a *serious* OS at the office, one that needs an office to run in. My laptop's for tertiary stuff—light word processing, quick 'n' dirty telecomm, Tetris. To get *my* office-

big disk, with GUI front end attached, that connects to any one of three LANs—his customer's, his office's, or his at home (yes, he has an Ethernet LAN at home). His OS/2-based set up includes 16 megs of RAM, a 14.4bps modem, a PCMCIA Ethernet card, and LANServer 3 software to tie it all together.

**Road warriors tend to do things in a hurry  
and more than one thing at a time—downloading e-mail  
while polishing off a last-minute memo, for example.  
They need a high-octane OS in a low-weight package,  
one that can do as many things as they can.  
And that's Warp.**

standard performance in a portable, I may as well buy a...*Powerbook*! And whose budget can I charge *that* to?

Fear not, IBM faithful. There is a way to have your cake and take it on the road it too. And that path is paved with neither macadam nor silicon. It rests instead on the right software—software that can ease your hardware burden significantly, smooth your way, and maybe even free up a buck or two for the CD-ROM drive and the built-in audio. And finally (thanks, IBM!), the right traveling software starts with OS/2, the very same system you have on your desk.

### It can be Done

It will come as no news that OS/2 has earned a rep as a finicky peacock of an operating system. It was hard to install, prone to temperamental outbursts, and had a huge appetite for RAM and disk space. That was the price you paid for a system capable of recalculating an 1,800-equation spreadsheet while faxing your lunch order to the deli down the street.

Taking that system and throwing it on a laptop wouldn't make much sense. Unless you know what you're doing. Or until now.

Alan Burke knows what he's doing. He's been using OS/2 on a ThinkPad 720 for more than a year now, and he's quite happy with the results, thank you very much.

The Ontario-based software developer creates custom client/server software for customers in the financial services biz. He sees his ThinkPad as a kind of "advanced Sneakernet," one

"I like OS/2 so much as a desktop solution that I figured I'd try it on the laptop," Burke said. "What do you know? With a little tweaking, it worked."

### OS/New: The Warp Factor

That "tweaking"—finding the right Ethernet, PCMCIA, and printer drivers, fine tuning the fax modem, installing just the right mix of applets and tools, etc.—may be more than your average screw-the-tech-stuff-I-have-work-to-do! guy or gal is willing to take.

Enter IBM, which for its own pecuniary reasons (spell that *Gerstner*) has responded with Warp, the OS/2 even a Mac-head could love.

There are plenty of reasons to make the new OS/2 your traveling companion. One is that Warp is a lot less. "We have done a lot of thinking about the mobile user, and you see it surface in Warp," says Keith Lindenberg, who has been on point for IBM providing information on Warp. "For example, traditionally you needed at least eight megs of RAM to run OS/2 on a laptop. Warp runs very well in four megs."

Indeed, it seems as if IBM's software engineering team finally got tired of listening to their own hardware division complain; Warp is bespoke tailored for hardcore travelers. Consider these built in features:

- **Internet browser and access.** This is no sop to net.dweebs, but rather a full featured Internet service you can crank up in



## SPECIAL REPORT

Boston, Bakersfield, or Bangkok, complete with IBM support and a functional network service center at the back end. For the first time in a long time, IBM looks to be out front in offering a cutting edge service (full Internet access for just \$20 a month) built into its system software; both Microsoft and Apple have plans to introduce similar services in 1995. Why do you need Internet connectivity on the road? If you're asking that question, you might not have to worry about working next year.

- **A spiffier user interface.** You may think better installation, hand-holding, and icons are trivial, but then you probably had someone install OS/2 on your desktop machine, and someone else on 24 hour call whenever your system acts up. Warp even includes a utility called "Plug and Play" that automatically queries PCM-CIA cards and provides information on their status—a crucial utility for those whose functionality resides on 54x86mm cards, and one that addresses one of OS/2's most persistent problems.

- **Comet cursor.** It's tough to nail that presentation at 37,000 feet when you can't see the damned mouse cursor. So IBM has added a gem of a utility to help you find it. Turn on the comet cursor and the mouse will take you back to the days of Lawrence Welk as it leaves a trail of "bubbles" as it moves. It's a much more elegant solution than those thumb-sized cursors you may have used in the past.

- **BonusPak applications built in.** You may think you don't care about the wimpy IBM Works apps (Works packages are wimpy, and you're a *professional* OS/2 user, right?), but compact, well-integrated comm and information management applications that work reliably are a godsend to any road warrior.

A lot of these new features are aimed at the home and small business user, true. But on the other hand, those users are quite likely to demand mobility as a standard feature in their computing environment, creating a larger market and spurring innovations and new products.

### The Bottom Line?

Warp is exciting, but it's only the new gloss on a third generation OS that, for reasons you may not have thought of, turns out to be remarkably well suited for life on the road. Here's the nut of it, the bottom line: Road warriors tend to do things in a hurry and more than one thing at a time—downloading e-mail while polishing off a last-minute memo, for example. They need a high-octane OS in a low-weight package, one that can do as many things as they can. Try doing both of those things on a Windows laptop.

Now do you see why the Windows hourglass figures in the Warp advertising campaign? "OS/2's multitasking works so well [on the road] that it becomes second nature to fire off a job and switch to something else," says Bill Nichols, who owns GT Software in Yelm, Washington. The delays that DOS and Windows impose are instead mostly overlapped, and switching tasks works better in OS/2.

You knew this; it's how you work at your desk every day. But until last month, you needed to be schizoid (or work for IBM, so you *had* to carry a ThinkPad 750 with a 340mb hard drive) to be a Road Warrior.

No more.

Back to Nichols. "How does this relate? You don't need the fastest laptop. A 486/25 will do quite well given 12-16mb of memory, and less with Warp."

And less with Warp. Eight megs in the laptop, four if it's been a bad year and the bean counters are watching. Try running the Mac or Windows OS, in this year or in '95, in that!

But even pre-Warp, OS/2 has gotten a bad rap, up through 2.1. As one computer marketing executive (who requested anonymity to protect his multiplatform-dependent job) put it: "Yeah, it needs lots of RAM. So does Unix and the Mac OS. You want a Pinto, stick with DOS. The myth that OS/2 is a memory hog is ridiculous when you consider what DOS+Windows+Norton+a memory manager+all your other favorite utilities take up. Besides, with OS/2 you can format diskettes in the background."

All this is pre-Warp. Our testing makes clear that you can crank up the impulse engines with Warp loaded into four megs; with eight, you can fly between star systems.

### It's not all Milk and Cookies

Warp is a huge leap forward into portable functionality, but OS/2 is not without its problems. One of the biggest is the fact that it's supported by ... IBM.

"It has been a problem for me to use OS/2 since the beginning. IBM tech support has been anything but helpful," says Lee Rogowski, an information systems team leader for the U.S. Forest Service in Coeur d'Alene, Idaho. "The position of the company appears to be, 'Tough luck, OS/2 was meant for a desktop.'"

This will come as no surprise to anyone who's dealt (tried to deal?) with IBM. Describing IBM as "balkanized" gives the Balkans a bad name. This is a company most of whose execs use ThinkPads...preloaded with DOS/Windows!



## SPECIAL REPORT

Echoing the gripes posted repeatedly on forums on America Online, CompuServe and other BBSes, Rogowski, who uses his OS/2-fueled laptop for field work, continues: "The biggest problems I've had have been drivers. Installing OS/2 to a usable state has taken a long time for me due to a lack of vendor support for producing drivers.

"I waited over a year for the driver for my Acecat tablet. I still haven't been able to get more than 256 colors out of my Tseng ET4000 chip under OS/2. As a result, the work that I do requiring CorelDraw and Photoshop still must be done under Windows as I am unable to achieve the quality necessary with 256 colors under OS/2."

Rogowski is not alone. "Be cautious about drivers on laptops," warns Jay Vanderbilt, technical support manager at Scenario, Inc. in Newton, Mass. "The hardware is frequently slightly odd, and there may be no drivers for some peripherals. Even mice may be a problem, and you may have to go hunting or bypass the internal mouse for a serial mouse."

"Video drivers for anything but VGA mode can be very hard

to find," chimes in Kevin Krieser, a communications programmer at Telos in Lawton/Ft. Sill, Okla. "I still haven't found a driver that supports my laptop in 512k of video memory." Other problems veteran road warriors noted include battery life (multitasking OSes do tend to suck down power), the weight of the system (particularly for multimedia systems, which can push the scales up into the seven pound range and beyond), and a lack of applications.

But as is often the case with those who have invested what often seems like half their waking hours in making their systems work, most everyone who has gripes about OS/2 is also quick to defend it. (In fact, hanging out with OS/2 fanatics is a little like hanging out with car guys—the jargon, the camaraderie, the endless hours under the hood.)

"You have to distinguish between using OS/2 on a laptop and just *installing* it," explains Vanderbilt. "Once it's up and running it's as easy to use on a [good] laptop as anywhere else. ... Laptops that can usefully run OS/2 are very new, and drivers and hardware compatibility haven't caught up. If you had asked TI or NEC

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## SPECIAL REPORT

or IBM about OS/2 on laptops two years ago they would have given you that glazed look they save for loonies asking about unfeasible products with no market."

### Tricked Up and Stripped Down

So it works—no, it works *well*—on a laptop. But what kind of laptop? What are the specs, and what software and peripherals should you get? Never fear. The boys are willing to get out from under the drip pan long enough to offer their own ideal systems as proof of concept.

"I have physically different systems depending on where I'm working," says Rogowski, who has docking stations at both home and office. "In the office, I use a tablet mouse, a Trantor parallel port SCSI controller, and three SCSI devices. I use an ET4000 based video card in my docking station for 65,000 colors in 640x480. At home I have the same video card and Acecat tablet mouse. In travel mode, I use the built in trackball and the built in cirrus video chip. This chip does 256 colors at 640x480."

And what is Rogowski's hardware/software system of choice? "A 486DX2 66mhz system with 20mb of memory and a 500mb

hard disk. I have the disk partitioned to use the OS/2 boot manager and have a DOS partition where DOS and Windows lives and a separate OS/2 partition. I use Stacker for DOS and OS/2 and have a 100mb partition for SCO Unix. I have a native OS/2 tape backup program (SytoS), a screen saver, FaxWorks, Lotus, and CorelDraw 2.5 (not loaded as it is too incompatible with CorelDraw 5 for Windows). The rest of the apps, including WordPerfect, are Windows programs I run under OS/2. I do mainly graphics and map illustration type work, so I use CorelDraw, Photoshop, Autocad, Borland's Office Suite, HiJaak for screen grabs, and Harvard Graphics. I also have a Megahertz PCMCIA XJ1114 modem."

Here's gearhead Barry Nichols on his system: "I use Twinhead-made notebooks, not ThinkPads, to run OS/2. One such machine has 20mb of RAM, a 212mb drive, a clock-doubled 486, and an active matrix display. The machine runs 1-2-3 for OS/2, the C/C++ IBM compiler, Borland C/C++ 3.1, XVT, PDC Prolog, VX-REXX, the GammaTech utilities, FaxWorks for OS/2, CA-Textor, and DB2 for OS/2." Whew.



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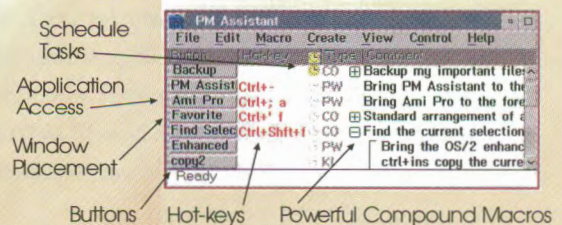
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Rogowski's and Nichol's are typical of the rigs carried by the hard core Road Warrior. Typically it's a 100mhz 486DX4 with at least 16mb RAM, a multi-hundred meg drive, an internal modem, and an active matrix color screen. As for applications, a sampling by your obedient servant indicates the hard core set up for OS/2 2.1 users includes a file manager (frequently OS2Tree by Levine), a PIM (Arcadia Workplace Companion by Arcadia or Relish by Sundial Systems), an applications suite (Lotus SmartSuite), several utilities (GammaTech by Softouch and CPU Monitor by Bon Ami show up often), compression software (Stacker for OS/2), and communications software (LinkRight by RightWare, FaxWorks and HyperAccess as well).

That's the high end of the portable set up. But not everyone can buy the most expensive car on the lot. That tricked up rig will run you around \$5,000, even before you plunk down another grand or so for additional software. What can you get for about \$2,000? Plenty of productivity. A lower end system might include a 25mhz 486SX, 4mb RAM, 150mb hard disk, a PCMCIA slot, and a monochrome screen. And Stacker.

And if you really want to economize while on the road, be careful how you load OS/2 onto your notebook, the computer marketing exec suggests. "Avoid installing everything like MMPM/2 and you can skinny the sucker down to 20 megs or so, which isn't bad when you consider how much disk space gets vacuumed by DOS, Windows, and the utilities you'd need to bring it up to OS/2 levels. Do the same thing with your applications so they take less time to load. Use the power management options to minimize battery drain. And don't run screen savers—they're the biggest joke in the industry, since screen burn hasn't been a problem since they invented the VGA standard and we stopped staring at green letters."

With all that extra power and storage space, you can install a few of the more than 100 games IBM plans to support in the Warp release. After all, what good is a Road Warrior's primary weapon if it isn't packing at least four levels of *Doom*? ♦

*John Battelle has been covering technology from the San Francisco Bay Area for close to a decade. In his free time, he's the managing editor of Wired Magazine.*

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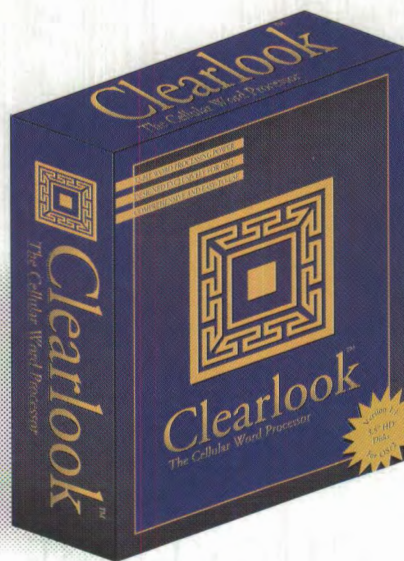
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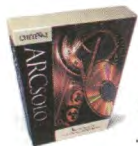
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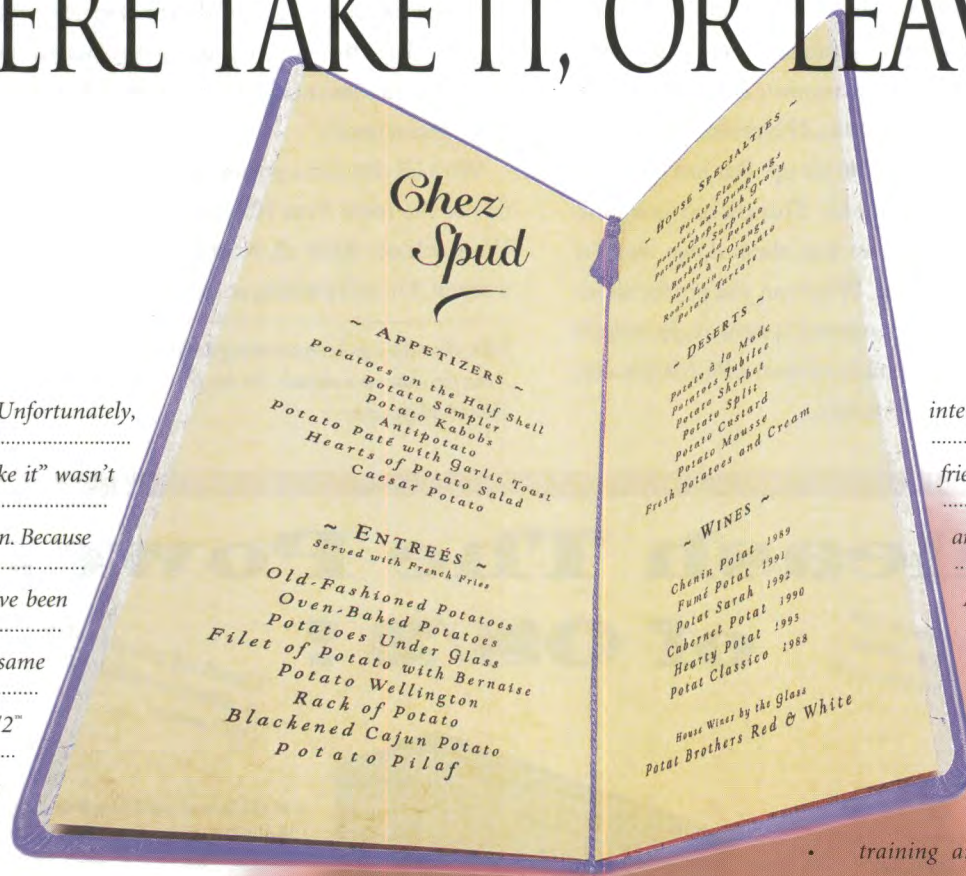
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# Warped for the Holidays

BY MICHAEL KOGAN

**T**he gifts arrived early this year for OS/2 users. They weren't wrapped in fancy paper and tied with a ribbon and bow, but rather shrink-wrapped.

It's the thought that counts, though. And thought there clearly was. Judging from the contents of the BonusPak of applications bundled with the new OS/2 Warp Version 3, IBM apparently has been visited by the Ghosts Of Christmas. It has seen the light on how to add value to OS/2, attract new users, and make long-standing ones happier: packaging.

This is packaging with a vengeance. Those placeholder "applets" in the ironically named "Productivity" folder are gone, replaced by nine seriously useful programs: IBM Works, FaxWorks, HyperAccess, Person to Person, an Internet suite, CompuServe Information Manager for OS/2, a Multimedia Viewer, Ultimedia Video IN, and the System Information Tool.

If you went out to buy these boxes at your local discount computer barn, you'd likely pay close to a four-figure sum. IBM is supplying them at no additional charge with a new version of OS/2 that it's selling for two figures. Nor are the programs in the BonusPak the crippled brethren of "real" applications. I've used them and they're the real thing—useful working tools that provide productivity, entertainment, and connectivity value. As a result, the BonusPak, and by extension OS/2 Warp, will be especially appealing to the mass market of home and small office users.

## The Works, Please

Installing the BonusPak is simple. The programs are all 32 bit native OS/2 code and exploit the Workplace Shell, which means they're well integrated and their interfaces are familiar, consistent, and easy to use. Most are multithreaded as well.

IBM Works would be an impressive package under any circumstances; for free, it's a knockout! This suite, developed by Footprint Software, delivers basic productivity tools: a word processor, spreadsheet, database, report writer, and charting tool. It provides robust interoperability with existing data formats

through a built-in import/export capability, hot-linking among documents, spreadsheets, and charts, and plenty of samples and templates.

Footprint has also added a bevy of personal information manager features supplied by Arcadia. Included are a phone book, to-do lists, a monthly planner, a yearly calendar, an appointment book, contact lists, a notepad, and reminders.

FaxWorks uses multithreading to bring essential fax capabilities to your PC without dragging it to its knees. (If you use a fax modem under DOS/Windows, you know exactly what I mean.)

Sending a document is as easy as dragging its file icon and dropping it on the fax machine icon, and selecting the destination. FaxWorks is tightly integrated with Works and can use the Works phonebook for automatic fax addressing.

The final piece in the Footprint package is HyperAccess, a "light" version of Hilgraeve's popular HyperAccess 5. HyperAccess replaces the pathetic PM Terminal applet, and provides basic asynchronous communications for dialing bulletin boards and terminal emulation.

## And Some Networking ...

With all the hullabaloo about the information highway and the Internet, the state of the art Internet Services is strategically very valuable. Single-button installation gives you all the TCP/IP plumbing and tools needed to access the Internet through IBM's own Internet access provider. Plus, you get ten free hours to explore the 'net. Included are the SLIP protocol for connecting over a modem, ftp for transferring files, and a graphical interface for easing exploration and access.

If you've been using WinCIM under Windows 3.1 or WIN-OS2, you'll be impressed with the native CompuServe Information Manager for OS/2. It offers great user interactivity and smooth communications, resulting in fewer dropped sessions and interrupted downloads. The OS/2 CIM comes with one free month of basic CompuServe services (worth \$8.95) and a \$15 usage credit applicable to extended services.





## EYE ON THE MARKET

Person to Person is a slick remote communications package from IBM for file and data transfer, conferencing, and collaborative tasks. Using operations no more complex than a person-to-person call, this program makes it easy to stay in touch and share information with other users or your home or office computer.

### And Some Entertainment!

The Multimedia Viewer included in the BonusPak offers features from IBM's Ultimedia Tools series. Combined with Warp's multimedia enhancements, it gives users a seamless graphical interface for managing and viewing image, audio, animation, and video objects. The viewer is built on a "light table folder" motif, in which each object is displayed as a thumbnail slide mounted on a photographer's light table. Click on an object and the appropriate browser or player is invoked. With Warp's Kodak Photo CD support, users will have a complete image viewing solution, and a great way to keep large graphics or image files handy.

Also from the Ultimedia series is IBM's Video IN product. It complements the Multimedia Viewer's capabilities by providing users with video authoring and capture support. Video IN uses OS/2's multitasking power to capture video from a wide variety

of video capture adapters and compress it into standard Ultimotion or Indeo file formats.

Finally, the System Information Tool is a powerful systems management utility. It displays the hardware and operating system configuration data for any OS/2 PC without rebooting into setup or a diagnostic program. It nicely complements the Plug & Play PCMCIA support of Warp by presenting graphically detailed information about each hardware device, whether you want SCSI logical unit IDs or the CSD revision number of an operating system component.

### Planting Seeds

Since this initial release of OS/2 Warp Version 3 is targeted at Windows users and the preload OEM market, it is in the OS/2 for Windows packaging format. You need Microsoft Windows if you want to run Windows programs. This leaves today's OS/2 2.11 users temporarily without an upgrade path to Warp, but another present should arrive later this year in the form of a "full pack" version of OS/2 Warp with WIN-OS2 support. In 1995 you can also expect another Warp-based product that bundles OpenDoc and more network-enabling.

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## EYE ON THE MARKET

Clearly Microsoft's Windows 95 plans are being driven by IBM's delivery of OS/2 Warp. Aggressive packaging schemes such as the BonusPak will keep Microsoft on the defensive as OS/2 Warp asserts itself in the market.

While the concerns heard on the boards that OS/2 Warp's BonusPak may adversely affect OS/2 ISVs are reasonable ones, the negative impact will be minimal. Think of the BonusPak bundling as planting seeds with new users that will grow into demand for more robust software—software like the Lotus Smartsuite, the full HyperAccess 5, and Golden ComPass.

IBM's aggressive bundling strategy will do what it is intended to do: get Warp loaded on the systems of home and SO/HO users, providing value and thus spurring OS/2 market share growth—and, incidentally, improving the long-term business case for OS/2 ISVs.

Not a bad holiday gift, eh? I guess OS/2 users were good this year—what else could we want? Well, maybe a calculator, a bundled disk compression utility, or an OS/2 version of Quicken, if you really want to know.

It's not that I'm not grateful, Santa, but how about some advance planning for next year? ♦



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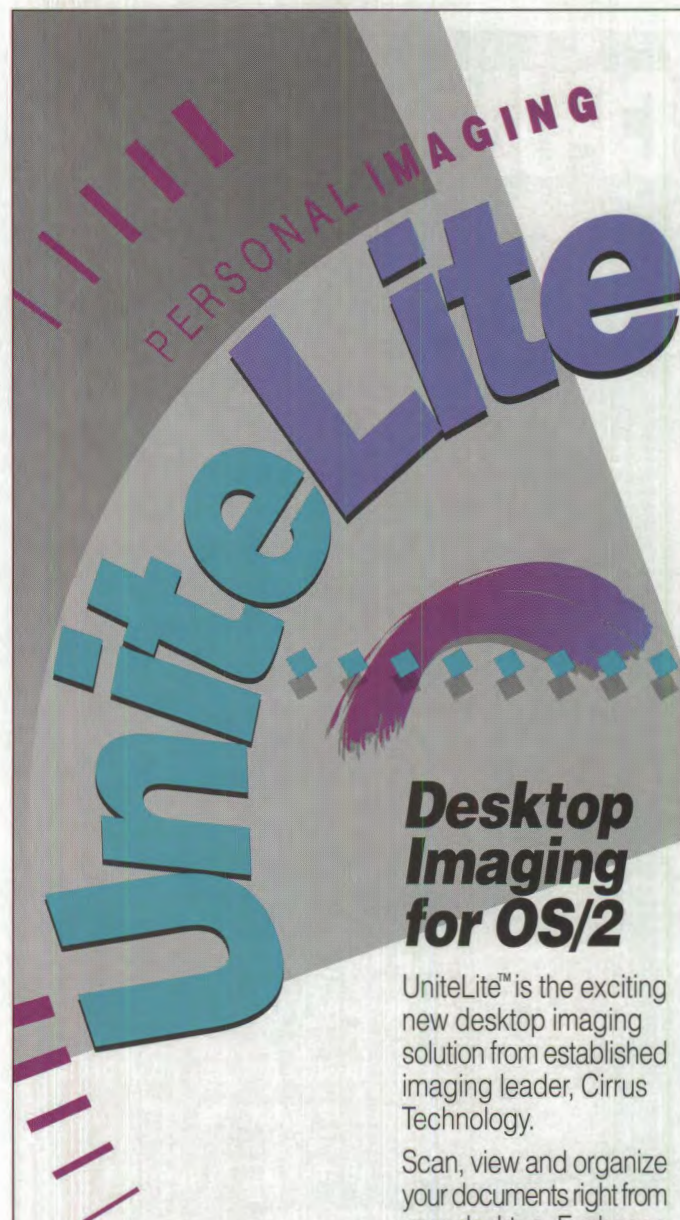
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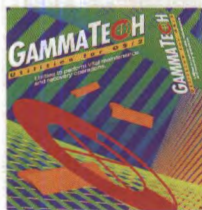
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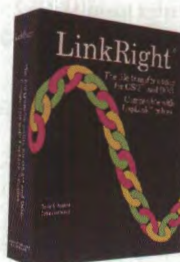
ISSC  
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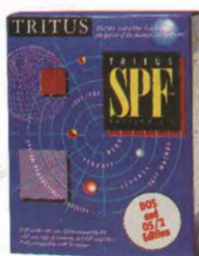
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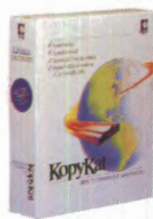
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IBM CAD/3X is an easy to use CAD package. Yet it gives you more professional 2D features than any CAD under \$1,000. It is recommended for plans, sketches, layouts, and more.

Order number 172 *MSR: \$495.00*  
**OUR PRICE: \$95.00**

### Graphic OS/2

Scientific Endeavors Corporation

GraphiC is a library of "C" routines for creating every sort of technical plot. High resolution vector format for publication quality.

Order number 204 *MSR price: \$495.00*  
**OUR PRICE: \$395.00**

### ◆ DEVELOPMENT TOOLS

### BD/CX ("Baby Driver")

Autumn Hill Software

BD/CX is the third generation of Baby Driver, Autumn Hill's printer toolkit.

BD/CX provides printer support for your application, allowing you to print text and graphics on more than 900 printers.

Order number 178 *MSR: \$499.00*  
**OUR PRICE: \$399.00**



### CSet++ "Bundle" Promotion

CD-ROM version only.

Includes CSet++, Experience CSet++, and OS/2 for Windows

Order number 175A *MSR: \$249.00*  
**OUR PRICE: \$229.00**

Diskette & Documentation Version

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**OUR PRICE: \$279.00**

### C/C++ 10.0, CD-ROM Edition (CD-ROM with on-line documentation)

Watcom

Professional C and C++ development environment for 16 and 32 bit DOS, Windows, OS/2, Windows NT, and Novell NLMS. Includes a comprehensive toolset with an IDE, debugger, C++ class browser, MFC support, and more.

Order number 212 *MSR: \$199.00*  
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### CA Realizer

Computer Associates

CA-Realizer is the ultimate BASIC construction set for Windows and OS/2. The

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same CA-Realizer BASIC code that creates a Windows application ports instantly to OS/2.

**ORDER NUMBER 207** *MSR: \$99.00*  
**OUR PRICE: \$79.00**

### **CEnv for OS/2** *CLEARANCE*

Nombas

A scripting tool to enhance or replace batch/REXX programming. Automate any session. Exploit 150 internal functions and the OS/2 API. Includes hundreds of samples and utilities.

**Order number 156** *MSR: \$45.00*  
**CLEARANCE PRICE: \$15.00**

### **Error Manager 2.0** *CLEARANCE*

Soft & GUI Corporation

Error Manager is an OS/2 2.x development tool kit that provides unique testing and debugging facilities. It eliminates the need to check API Return codes, and no symbol information is required.

**Order number 117** *MSR: \$225.00*  
**CLEARANCE PRICE: \$49.00**

### **GammaTech REXX Superset/2**

SoftTouch Systems, Inc.

Provides the programmer with an extended set of 308 REXX external functions to issue network commands, execute video functions, manipulate processes and semaphores, initiate file and system operations, plus more.

**Order number 174** *MSR: \$79.95*  
**OUR PRICE: \$69.95**

### **Guild UIMS** *SOLD OUT*

Guild Products, Inc.

UIMS is a visual environment for the development of graphical user interfaces for OS/2 by C/C++ programmers. The resulting GUI can be ported to Windows and Macintosh by a simple recompile.

**Order number 122** *MSR: \$895.00*  
**CLEARANCE PRICE: \$49.95**

### **GpfRexx**

Gpf Systems, Inc.

A WYSIWYG OS/2 PM visual programming tool that uses REXX. Point and click to create basic or advanced applications using OS/2's capabilities. No royalties will be owed; configurable run-time capability.

**Order number 118** *MSR: \$247.50*  
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### **Hyperwise**

IBM

Hyperwise lets you create complete multimedia presentations with just the click of a mouse to link text, graphics, audio and video, create lists, tables and other text elements without typing

Information Presentation Facility (IPF) script tags. They're all done for you!

**Order number 284** *MSR: \$295.00*  
**OUR PRICE: \$215.00**

### **IPF Editor**

Perez Computing Services

IPF Editor, a 32 bit PM program, makes it easy to create on-line documents and context sensitive help for OS/2 applications without learning IPF.

**Order number 264** *MSR: \$150.00*  
**OUR PRICE: \$139.00**

### **IPF Builder**

Custom Design Software

IPF Builder is an essential tool for all OS/2 programmers. This specialized editor will save you time, money, and frustration when creating the source code for your INF and on-line HLP files.

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**OUR PRICE: \$85.00**

### **KASE: VIP for OS/2**

KASE Systems

KASE: VIP for OS/2 is the industry-leading visual design and code-generation tool for developing OS/2 applications in C. Each purchase includes discount coupon for new products.

**Order number 257** *MSR: \$1,995.00*  
**OUR PRICE: \$495.00**

### **Notrix**

Percussion Software

Notrix uses REXX to build Lotus Notes event-driven, server add-in applications. Manipulate Notes data WITH NO Notes API or C programming.

Application Developer's Kit:

**Order number 270** *MSR: \$199.00*  
**OUR PRICE: \$185.00**

Notrix Server Kit:

**Order number 269** *MSR: \$1,495.00*  
**OUR PRICE: \$1,450.00**

## **THIS MONTH**

**NEW!**

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#### **Notrix Server Kit:**

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**OUR PRICE: \$1,450.00**

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## OS/2 UCSD Pascal Development System

Cabot Software

The UCSD Pascal 32 bit professional development system is for Turbo Pascal users who want TP compatibility, a full 32 bit Pascal compiler, and links into OS/2's API technology.

Key benefits include: UCSD Pascal links into the OS/2 API technology; Turbo Pascal compatibility; production of portable programming code; and value for money product, with a full range of programmers toolboxes.

Order number 267 *MSR: \$299.00*  
**OUR PRICE: \$275.00**

**NEW!**

## MENUET/CX

Autumn Hill Software

MENUET/CSX is a C++ application framework for OS/2, WINDOWS and DOS. MENUET/CX was designed and developed under OS/2.

Order number 179 *MSR: \$599.00*  
**OUR PRICE: \$499.00**

## Objectpm

Raleigh Systems, Inc.

The first class library geared specifically for OS/2 and the Presentation Manager, Objectpm provides more than 200 classes of objects encapsulating windows, controls, graphics tools, forms, threads, and much more. Supports Borland C++ for OS/2 and IBM CSet++.

C Set++ Version with Source

Order number 119A *MSR: \$399.00*  
**OUR PRICE: \$349.00**

Borland Version with Source

Order number 119B *MSR: \$399.00*  
**OUR PRICE: \$349.00**

C Set++ Version without Source

Order number 119C *MSR: \$235.00*  
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Borland Version without Source

Order number 119D *MSR: \$235.00*  
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## REXX Diagnostic Commander

Suitable Alternatives

Rexx Diagnostic Commander is a source level, interactive REXX debugging tool. Set breakpoints, single-step instructions, Jump or Run to any instruction. Windows allow variables, monitoring, and alteration.

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## Source Safe

One Tree Software

SourceSafe coordinates developers on a LAN, and tracks versions of source code modules and entire projects. And SourceSafe's PM and commandline interfaces provide easy access to your entire development system.

Order number 176 *MSR: Single User: \$395.00*  
**OUR PRICE: \$325.00**

Order number 177 *MSR: Five User: \$1,595.00*  
**OUR PRICE: \$1,295.00**

## VisPro/REXX

Hockware

VisPro/REXX takes the power of OS/2, Workplace Shell, and the REXX language and harnesses them into an easy-to-use visual programming environment.

VisPro/REXX, Bronze Edition

Order number 169 *MSR: \$99.00*  
**OUR PRICE: \$89.00**

VisPro/REXX, Gold Edition

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## Visual Age

IBM

Client/server application development takes on new power with Visual Age, which includes visual programming tools, a library of reusable parts, distributed database support, and graphical user interface support. Includes IBM Smalltalk object oriented programming environment.

Order number 281 *MSR: \$2,495.00*  
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**NEW!**



## VX•REXX for OS/2 Version 2.0

Watcom

Powerful and easy-to-use integrated environment for developing OS/2 2.x PM applications, including a project management facility, visual designer and debugger. New to this version are Notebooks, Containers, Sliders Popup menus, DDE, objects and more.

Order number 211 *MSR: \$99.00*  
**OUR PRICE: \$95.00**

## Watcom VX-REXX Client/Server Edition Version 2.1

WATCOM

A visual development environment for OS/2. Powerful connection, query, and chart objects allow you to access several databases, manipulate data and chart results quickly and easily. Features include drag-and-drop programming; bound controls; professional multithreaded, multi-windowed and drag and drop enabled application development.

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**NEW!**

## ◆ DATABASE

### DB2/2

IBM

This industrial-strength database management system brings to your PC desktop and client/server LAN environment the function, reliability, and performance that users of DB2 for mainframes have come to expect—at an affordable PC price. Supports application access from OS/2, DOS and Windows client workstations as well as NetBros and Novell IPX/SPX communications protocols.

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CD ROM

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DB2/2  
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**OUR PRICE: \$265.00**

DB2/2, Client Server 10 Pack  
CD-ROM

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**OUR PRICE: \$1,495.00**

DB2/2, Client Server 10 Pack  
3.5" diskette

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## HODstar™ Pager (single license)

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Permits users to quickly and easily send messages to today's standard pagers. Also

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creates standalone programs to add pager functionality to any OS/2 batch file, REXX program, and commercial application. Supports all AT-compatible modems. Also available in site-wide and 'unlimited use' license.

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### **HODstar™ Monitor (100-user license)**

HODstar™ Support Solutions  
HODstar's base-line product, Monitor provides your support staff complete profiles and assignments for all resources on any network without giving users access to the actual servers. Also available in single-user license, site-wide, or 'unlimited use' license.

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### **HODstar™ Supporter (100-user license)**

HODstar™ Services  
Expands upon the Monitor product by adding call tracking. Features automatic call alarming, self-updating call queues, and support for HODstar Pager. Also available in single-user, site-wide, and 'unlimited use' license.

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### **Manage-It!**

Baron Software Services  
Manage-It! provides the Help Desk administrator with the necessary software tools to track incoming calls, produce statistical reports and maintain a knowledge-base essential to the support desk.

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**OUR PRICE: \$115.00**

### **OnCmd xBase for OS/2**

On-Line Data  
A native 32-bit PM implementation of the popular Xbase language. OnCmd also offers an upward migration of DOS and Windows Xbase applications into OS/2 with implicit multi-user and GUI support

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### **SQL for OS/2 Version 3.2**

Watcom  
Watcom SQL for OS/2 is a high performance standalone SQL client/server

DBMS for OS/2. Watcom SQL for OS/2 includes a variety of interfaces to access Watcom SQL from many popular OS/2, DOS, and Windows applications including embedded SQL application development with popular C/C++ compilers.

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## **◆ NETWORKING**

### **CorelSCSI**

Corel Corporation  
With CorelSCSI you can daisy chain up to seven disk, CD-ROM, WORM, and other SCSI drives to maximize the power and capabilities of your desktop OS/2 machines.

Order number 123      *MSR: \$129.00*  
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### **Desktop Observatory**

Pinnacle Technology, Inc.  
Remotely configure and password-protect desktops. Prevent deletes, copies, moves, dragging, shadows, or renames, or hide objects from view. Launch your own C or REXX routines on any network client, based on event.

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**CLEARANCE PRICE: \$75.00**

### **LANtastic for OS/2**

Artisoft, Inc.  
LANtastic for OS/2 brings easy to use networking and peer-to-peer sharing to the OS/2 platform.

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**OUR PRICE: \$115.00**

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## **◆ DEVELOPMENT TOOLS**

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**OUR PRICE: \$275.00**

### **Watcom Vx-REXX Client/Server Edition Version 2.1 WATCOM**

Powerful connection, query, and chart objects allow you to access several databases, manipulate data and chart results quickly and easily. Features include drag-and-drop programming; bound controls; professional multithreaded, multi-windowed and drag and drop enabled application development.

Order number 266      *MSR: \$ 299.00*  
**OUR PRICE: \$289.00**

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**OUR PRICE: \$115.00**

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## LAN Server 4.0

IBM

LAN Server is easy to use and easy to grow, making it the best network operating system for small and medium sized businesses as well as large and corporate installations.

Supports OS/2, Windows and Macintosh, as well as most Ethernet and Token Ring adapters.

Lan Server 4.0—Entry, CD ROM

Order number 273A *MSR: \$795.00*  
**OUR PRICE: \$525.00**

Lan Server 4.0—Entry, 3.5" diskette

Order number 273B *MSR: \$795.00*  
**OUR PRICE: \$525.00**

Lan Server 4.0—Advanced, CD ROM

Order number 274A *MSR: \$2295.00*  
**OUR PRICE: \$1,749.00**

Lan Server 4.0—Advanced, 3.5" diskette

Order number 274B *MSR: \$2295.00*  
**OUR PRICE: \$1,749.00**

Lan Server 4.0—Upgrade, CD ROM

Order number 275A *MSR: \$395.00*  
**OUR PRICE: \$295.00**

Lan Server 4.0—Upgrade, 3.5" diskette

Order number 275B *MSR: \$395.00*  
**OUR PRICE: \$295.00**

## RUMBA for the Mainframe. OS/2 version 3

Wall Data Inc.

Easy to use OS/2 to Mainframe connectivity with drag and drop file transfer and paste linking of host and PC applications. Interface support for MS SNA Server, APPC and CPI-C 2.0, Novell Netware for SAA and TCP/IP.

Order number 286 *MSR: \$400.00*  
**OUR PRICE: \$365.00**

## TCP/IP v2.0

IBM

This is a collection of TCP/IP communication tools that allows you to establish an integrated computing environment between the most popular brands of workstations and hosts—IBM and non-IBM alike.

Order number 276 *MSR: \$230.00*  
**OUR PRICE: \$165.00**

## TCP/2-OS/2 Distribution System

Essex Systems, Inc.

This product provides TCP/IP connectivity for OS/2. It supports all released versions of OS/2 and NDIS, CM, and ODI drivers. TCP/2 provides network access from protected, real, and WIN-OS2 sessions, and offers IP Gateway capability.

Order number 125 *MSR: \$475.00*  
**OUR PRICE: \$399.00**

### ◆ IMAGING

## SPF/PC v 4.0

Command Technology

SPF/PC is a powerful file manager and full-screen text editor that emulates IBM's mainframe ISPF/PDF, providing a familiar environment for mainframe programmers who are faced with the challenge of developing on a PC.

Order number 186 *MSR: \$295.00*  
**OUR PRICE: \$189.00**

## UniteLite

Cirrus

UniteLite is a workplace shell enabled imaging product for OS/2 2.1 and WARP.

Advanced, yet easy-to-use features: scan, view, organize folders and print.

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**OUR PRICE: \$245.00**

### ◆ RAID SOFTWARE

## EZRAID for OS/2

PRO Engineering, Inc.

This software RAID solution supports RAID Levels 0, 1, 4, and 5. It works with SCSI, ESDI, and IDE disk interfaces and includes powerful array management tools.

Order number 127 *MSR: \$795.00*  
**OUR PRICE: \$625.00**

### ◆ MANUFACTURING

## ONSPEC 32

ONSPEC Automation Solutions

Advanced supervisory control and monitoring solution designed to work in

a lab or with plant-floor automation systems to provide real-time data acquisition, control, alarming and trending. Native 32 bit micro version takes full advantage of OS/2 power.

Order number 185 *MSR: \$995.00*  
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### ◆ TRAINING

## IBM working with OS/2 Version 2.1

USA Training

This four to six hour course focuses on the features and functions of IBM's OS/2 operating system, including the Graphical User Interface (GUI) called the Workplace Shell.

Order number 189 *MSR price: \$99.00*  
**OUR PRICE: \$94.95**

### ◆ DESKTOP MAPPING

## Spans Map

TYDAC Technologies Inc.

SPANS MAP is a comprehensive desktop mapping software package for the visualization and querying of geographically-referenced data. It imports standard data formats including dBASE, Lotus and SPANS, and allows the user to view data in five simultaneous formats: digital map, chart, spreadsheet, image, and text.

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### ◆ HARDWARE

## Warp Speed Light Pens

Warp Speed Light Pens, Inc.



The new Warp Speed Light Pen runs OS/2 fast. No more... "cursor, cursor where's the cursor?" Just touch and go, double click, drag and drop, fast and easy. The Warp Speed Light Pen frees up 100 square inches of desk space—where your old mouse used to sit. Free T-shirt offer from Warp Speed: The first 100

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orders will receive a free T-shirt: "I got 100 free Inches."

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With ISA Adapter card:

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**OUR PRICE: \$99.00**

**Order number 210A**

With MCA Adapter card:

MSR: \$199.00

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◆ **BOOKS**

**Advanced OS/2 Presentation Manager Programming**

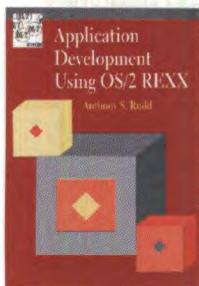
Thomas E. Burge and Joseph Celi  
(John Wiley & Sons)

Written by two IBM insiders, this definitive reference clearly explains OS/2 and its graphical user-interface, the Presentation Manager, and provides the reader with tips, tricks, and techniques in clear, concise C code.

**Order number 237**

MSR: \$34.95

**OUR PRICE: \$29.95**



**Application Development Using OS/2 REXX**

Anthony Rudd  
(John Wiley & Sons)

A concise and complete source of information necessary for developing applications using REXX in

an OS/2 environment. complete examples, devoid of superfluous details, make even the most complex concepts clear and easy to understand.

**Order number 220**

MSR: \$39.95

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**C and C++ Programming in the OS/2 Environment**

by V. Mitra Gopaul  
(Van Nostrand Reinhold)

**Order number 202**

MSR: \$39.95

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**Client/Server Programming with OS/2 2.1, Third Edition**

by Robert Orfali and Dan Harkey  
(Van Nostrand Reinhold)

A 1000+ page virtual encyclopedia, now fully updated for 2.1. Helps programmers

write better and faster applications that take advantage of the 32-bit environment. All code has been fully retested.

**Order number 150**

MSR: \$39.95

**OUR PRICE: \$34.95**

**Client Server Survival Guide for OS/2**

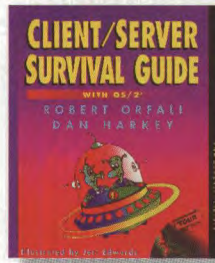
by Robert Orfali and Dan Harkey  
(Van Nostrand Reinhold)

Client/server is reinventing every aspect of computing from operating systems and communications to application architectures. This book helps you separate the theory from reality.

**Order number 209**

MSR: \$39.95

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**Designing OS/2 Applications**

David E. Reich  
(John Wiley & Sons)

The critical issue of basic OS/2 design applications are covered in full detail in this comprehensive book. OS/2 programmers will find coverage of programming and application design not documented anywhere else.

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**Dvorak's Guide to OS/2, Version 2.1**

by John C. Dvorak, David B. Whittle, and Martin McElroy  
(Random House)

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**GUI-OOUI War: Windows vs. OS/2: The Designer's Guide to Human-Computer Interfaces**

by Theo S. Mandel  
(Van Nostrand Reinhold)

The first comprehensive guide to user interfaces. Applying software logic and cognitive psychology, the book explores graphical and object oriented user interfaces.

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**Order number 286**

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**UniteLite Cirrus**

UniteLite is a workplace shell enabled imaging product for OS/2 2.1 and WARP. Advanced, yet easy-to-use features: scan, view, organize folders and print.

**Order number 289**

MSR: \$295.00

**OUR PRICE: \$245.00**

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### Inside OS/2 2.1, Third Edition

by Mark Minasi, John Little, Marlene Semple, Bill Camarda & Esther Schindler  
(Prentice Hall)

The all-new and updated version of the OS/2 tutorial and reference. Contains extended coverage of advanced topics such as the new 32 bit graphics engine and enhanced Windows 3.1 compatibility. Command sequences and illustrations show how to use each command. Also provides expanded coverage of the OS/2 Workplace shell.

Order number 195      MSR: \$34.95  
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### Instant OS/2! Porting C Applications to OS/2

by Len Dorfman  
(McGraw-Hill)

Instant OS/2! gives C programmers a way to create programs and interfaces for DOS and OS/2 using the exact same source code! With Len Dorfman's platform-tested techniques, software developers don't even have to know how to use OS/2, much less how to program for it.

Order number 227      MSR: \$34.95  
OUR PRICE: \$29.95



### Mastering OS/2 REXX

Gabriel F. Gargiulo  
(John Wiley & Sons)

Gargiulo applies his considerable technical and teaching talents in this book with rewarding results. Emphasizing real-world usage

instead of theory, his approach guarantees a quick and absolute mastery of REXX programming.

Order number 222      MSR: \$39.95  
OUR PRICE: \$34.95

### Maximizing OS/2 2.1

by John Little, Toby Pennycuff, Marlene Semple & Stephen Gutknecht  
(Prentice Hall)

The advanced guide to showing users how to take full advantage of OS/2's powerful features. Includes a disk containing OS/2 applications; provides task-oriented examples and covers the subjects of OS/2 connectivity, optimization, and organization.

Order number 196      MSR: \$39.95  
OUR PRICE: \$34.95

### MultiMedia Madness! Deluxe Edition

by Ron Wodaski  
(Prentice Hall)

Updated version to one of the best-selling multimedia titles! This book/CD-ROM set provides a complete introduction for both end users and programmers.

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OUR PRICE: \$49.00

### OS/2 Batch Files to Go

by Ronny Richardson  
(McGraw-Hill)

OS/2 Batch Files to Go shows you how to use batch files to expand the power and functionality of OS/2 2.1. The only truly accessible guide for using OS/2's version of DBL and the REXX language, this book will help you automate virtually every OS/2 task.

Order number 226      MSR: \$32.95  
OUR PRICE: \$29.95

### OS/2 2.1 Bible w/disk

by Peter Franken  
(Abacus Books)

The executive's guide to working with IBM's OS/2. Tells you everything you want to know about OS/2 2.1 and more. IBM accredited.

Order number 258      MSR: \$34.95  
OUR PRICE: \$29.95

### OS/2 Online Book Collection

IBM

This CD-ROM contains technical documentation for IBM programs including LAN Server, various development tools, communications, and the OS/2 operating systems 2.0 and 2.1. All documentation files are in ASCII format and may be viewed using the IBM Library readers included on the disk.

Order number 283      MSR: \$49.00  
OUR PRICE: \$34.95

### OS/2 Connectivity and Networking: A Guide to Communications Manager/2

by John E. Johnson  
(McGraw-Hill)

This book shows systems programmers and LAN administrators how to overcome problems associated with implementing OS/2 across the network using Communications Manager/2.

Order number 229      MSR: \$39.95  
OUR PRICE: \$34.95

### OS/2 Extra! VIO, KBD, and MOU Special Functions Revealed

edited by Len Dorfman and Marc Neuberger  
(McGraw-Hill)

This exclusive guide fills the gap in the official documentation for OS/2 2.0-2.1.

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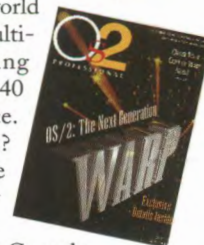
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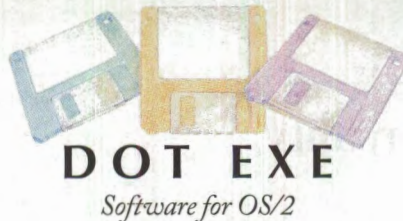
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DOT EXE

Software for OS/2

# ARCsolo for OS/2

The Workplace Shell look and feel is now available in a native 32 bit backup utility.

BY STEVEN LEVENSON

**T**he search for a first-rate OS/2 backup utility has been a primary quest for DOS aficionados who see backup utilities as an essential safeguard for their ever-increasing data repositories. While several vendors have responded to users' basic backup needs, none of the early entrants possessed the look and feel of a native 32 bit application written specifically for the OS/2 Workplace Shell—none, that is, until the introduction last spring of Cheyenne Software's ARCsolo for OS/2.

## Point and Shoot

ARCsolo for OS/2's Workplace Shell-like interface, complete with tree and icon views, helps users to find specific files. Then users can walk through the backup process with drag and drop ease by selecting any combination of files, complete directories and/or drives to back up. ARCsolo checks the tape and prompts for appropriate actions such as appending or overwriting existing data on tape cartridges, comparing backed up files with the originals, and setting password protection. Once you establish a routine, you can automate the backup process by creating scripts that run on a specific day or time of the month (for example, the scripts could be set to back up the entire drive every week with incremental appends every day).

These features make ARCsolo a good match for the novice user. The operational simplicity, coupled with a slim yet well-written manual, will put most users well on their way to mitigating potential data disasters. However, the manual falls short of an excellent novice user's guide by ignoring the issue of effective backup scheduling and tape rotation strategies.

Most OS/2 backup programs have workable methods for moving data from disk to tape. Where they sometimes fall short, however, is on file restoration from tape to disk. This is where ARCsolo's drag and drop feature really shines. (If need be, in fact, you can write scripts to automate or schedule the restore process.)

Note, however, that while ARCsolo appears to be a WPS

application, it does not support SOM operations. You cannot, for example, drag files from OS/2's drive and folder icons to the ARCsolo tape icon. Instead, you must use the identical-looking drive icons provided by ARCsolo. While that's not particularly problematic—ARCsolo's own icons and folders automatically arrange themselves conveniently for backup and restore operations—the behavior may catch a few unsuspecting users off guard.

In addition to individual workstation back up, ARCsolo for OS/2 can protect data essential to LAN Server file servers, including the User Account Information, Access Control Lists, and the Resource List. ARCsolo's network-aware design led to a few problems in version 1.0. For example, when we ran a backup on a client machine that was not logged onto the server, the backup process would mysteriously halt before completing. According to company officials, the programmers are working with IBM's LAN Server group to fix the problem.

While ARCsolo for OS/2 makes backup and restoration of OS/2 workstation and file servers look easy, it is not as robust as Cheyenne's flagship ARCserve product for NetWare. Of the two, ARCserve is better suited for enterprise wide backup jobs, including workstation backup from the file server. Perhaps if Cheyenne is flooded with requests from OS/2 users for an enterprise wide backup solution, they'll comply and develop an ARCserve for OS/2.

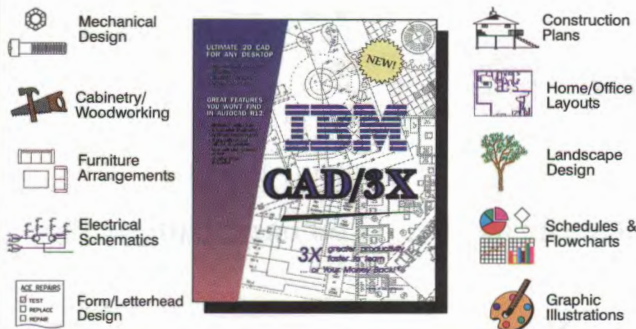
## History on Demand

To improve performance, ARCsolo stores backup history files on the hard disk, thus keeping them available for immediate viewing. Should you accidentally erase the history or need to restore to a new disk, the file can be rebuilt by scanning the tapes. When working with large archives, the historical database enables you to search across multiple sessions and tapes without physically accessing the tapes.

The workstation running ARCsolo for OS/2 requires OS/2



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## DOT EXE

2.1 or higher; a minimum of 8mb of RAM (16mb is recommended), and 5mb of storage space available on the hard disk. ARCsolo for OS/2 supports a variety of 4mm (DAT), 8mm, and QIC SCSI tape drives from various vendors and automatically identifies up to seven tape drive units attached to one controller. When more than one tape drive unit is installed, ARCsolo automatically spills the data onto the next drive ("tape cascading").

Contact Cheyenne for a list of tape drives that have been tested and certified to be compatible with ARCsolo for OS/2.

In backup throughput, ARCsolo edges in just behind BackupWiz (thus far, the fastest of the software *OS/2 Professional* has tested—see the review in Dot Exe in the June 1994 issue). When writing to a Wangtek 5525 (525mb SCSI) tape drive, ARCsolo averaged 10.0mb/min., compared to 11.4mb/min for BackupWiz. However, selective restores are much simpler with ARCsolo thanks to its drag and drop interface. (The next version of BackupWiz, due this quarter, should sport an improved selective restore feature.)

### Total Disaster Recovery

While advantageous for the more common selective restores (useful when a user accidentally erases a file), a GUI-based backup program carries an additional burden when restoring to a system that can no longer boot due to a crashed drive or corrupt system file. In such scenarios, the user must start the system from OS/2's boot diskettes, which support only character mode applications (such as BackupWiz).

The next version of ARCsolo (due within the month) will provide total disaster recovery by providing a command line restore option. Not only will this allow restoration from the boot diskettes, but the new disaster recovery option will recreate the drive partition tables and formatting (in the latter case, only for those partitions accessible to the backup procedure). The new release should also include auto changer support and increased

## AT A GLANCE

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compatibility with tapes that were backed up with Cheyenne's line of ARCserve enterprise backup software.

How you feel about ARCSolo may be flavored more by your preferred work environment and installed hardware than by its speed or other features. It offers no aid to those who use non-SCSI technologies such as the ever-popular QIC mini cartridge. And the IS professional comfortable with command line operation may opt for another product. However, Cheyenne's adoption of drag and drop operations will appeal to those SCSI-based backup users who have wholeheartedly embraced WPS technology, and will certainly help novices faced with the task of recovering an accidentally erased file.

While the quest for the perfect OS/2 backup utility may not yet be complete, OS/2 users now have plenty of quality choices, including Cheyenne's ARCSolo for OS/2. ♦

*Steven Levenson is a frequent contributor to various computer publications and is the author of several books on OS/2. He can be reached by e-mail at [stevenl@panix.com](mailto:stevenl@panix.com)*

## Cheyenne's Optical Storage Manager for OS/2

If you've been battling to keep your system's hard disk uncluttered in the face of data inundation and ever-increasing file sizes, it may be time to look for new storage options. Many IS departments have turned to optical storage as an effective medium for extremely large, reasonably static files (such as archival image storage).

However, managing the optical storage device quickly becomes an issue unto itself: When should a file move from the relatively fast hard disk to a slower optical storage device? And once the file is on optical media and the platter has been removed and stored elsewhere, how do you locate it?

Optical Storage Manager (OSM) for OS/2 is Cheyenne Software's high performance solution for file storage to optical devices and jukeboxes. It provides automatic and transparent movement of data from primary storage (the OS/2 hard drive) to secondary storage (optical drive).

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To the user, OSM appears as a single additional hard drive. In actuality, OSM stores data on both the hard disk and optical drive. OSM migration happens automatically and in the background, without user intervention. The user remains blissfully unaware of these background procedures.

### How OSM Works

Consider a typical installation that uses C: as the sole physical OS/2 hard drive. OSM installs itself as drive D:, although it allocates no partition on the physical hard drive or optical disk. Instead, files copied or created on drive D: reside physically in a data directory defined on drive C:. This directory acts as a buffer for files awaiting optical storage.

Files reside in the data directory for a certain period of time until deemed inactive. OSM then transparently migrates them to the OSM optical storage bank, freeing the space they were occupying on drive C:. Up to ten logical OSM drives can be configured per system.

### Who Should Use OSM?

Files migrated to OSM can only be appended to; changing them is not allowed. Thus, applications most likely to benefit from OSM include OS/2 products that generate large amounts of data that will see minimal changes after a certain period of inactivity. These include imaging applications (such as files created with IBM's Image Plus/2) and databases that build large archives of permanent records on an incremental basis.

When OS/2 2.0 was first introduced, optical storage was an expensive option primarily for industries handling large quantities of forms-based work (such as insurance, banking, and airlines). However, the rapid advance of hard drive and optical drive capacities, coupled with an equally rapid drop in associated costs, makes optical storage a practical reality for many users. Cheyenne's Optical Storage manager will give users the tools they need to manage the coming information onslaught. ♦

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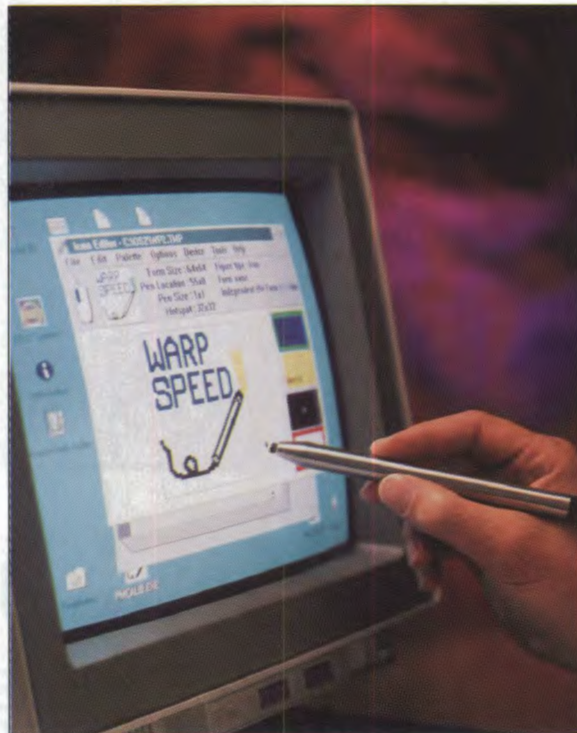
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Product News for the OS/2 User

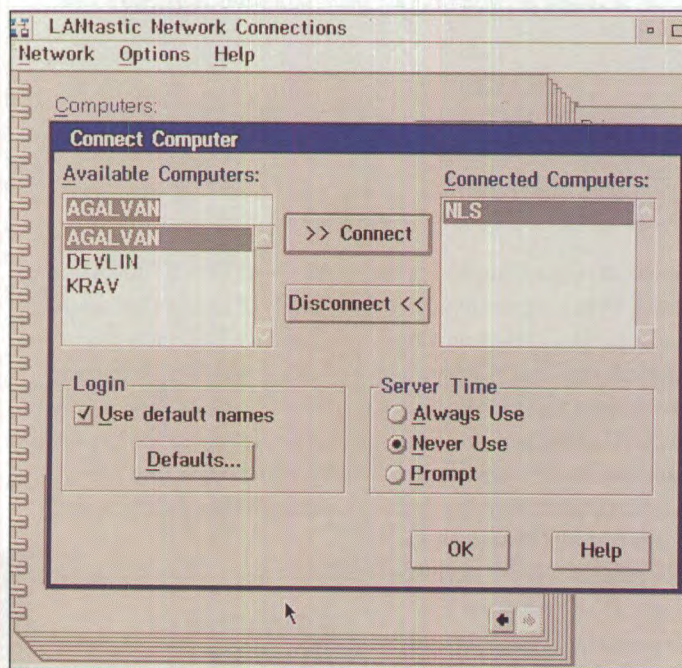
# SCOOPS

## LANtastic Beats IBM with Peer Networking

Artisoft Inc. last month extended peer to peer networking capability to OS/2 with the release of LANtastic for OS/2. This represents the first time the company has released a true 32 bit, multi-threaded version of its network OS, giving OS/2 users native access to LANtastic-based networks.

With LANtastic, users will now be able to connect to Artisoft's various operating systems, including LANtastic 5.0 and 6.0, CorStream servers, and Simply LANtastic. It will also enable users to connect to other network servers including IBM's LAN Server, LAN Manager, and Microsoft Windows for Workgroups, NetWare, and TCP/IP networks.

LANtastic for OS/2 is



Artisoft provides native peer to peer networking for OS/2 users.

written for OS/2's Presentation Manager. It includes a variety of security functions to delineate account privileges

and access rights, extending to administrators the ability to assign time-of-day and/or week access restrictions.

Other features include a slide bar that enables users to shift system resources from server to foreground applications. It supports Named Pipes, which enables users to access distributed client/server applications, and SQL databases. It also uses OS/2's print queues, allowing those with access to rush, hold, delete, and monitor network print jobs.

At press time, the product had not yet shipped, though company sources were projecting a mid October date for shrink wrapped product.

Meanwhile, IBM has yet to announce a release date for its peer to peer OS/2 product, which has been in beta testing since the start of the year and originally was slated to ship last June.

## New Products

### Global Village releases FaxWorks upgrade

After acquiring SofNet Inc. in August, Global Village Communications is now shipping two reengineered versions of SofNet's FaxWorks product. FaxWorks Pro 2.0 and FaxWorks Pro LAN are native OS/2 applications that enable users to send, receive, anno-

tate, and print faxes from the desktop.

Global Village was able to migrate most of the original source code into what is now a true 32 bit, SOM-compliant application. Drag and drop functionality has been added, along with a customizable tool bar for quick access. Also available is Calera's optical character recognition (OCR) engine.

FaxWorks Pro 2.0 is a stand-alone application that enables users to send and receive faxes in the background of any OS/2, DOS, or Windows session running under OS/2. FaxWorks Pro LAN 2.0 is a CID-enabled fax server application that allows users to share modems across OS/2-compatible LANs. The LAN version supports multiple

desktop routing, notifying designated desktops that a fax has been received. The single user product is \$149, and the LAN version starts at \$699 for 30 users. Additional seats and VIM-compliant e-mail integration is also available. Customers who purchased either product between July 1 and Sept. 25 are eligible for free upgrades. Global Village



## MARKETLINE

Communications, Inc., 685 East Middlefield Rd., Bldg. B, Mountain View, CA 94043. (800) FAXWORKS, fax (404) 984-9956.

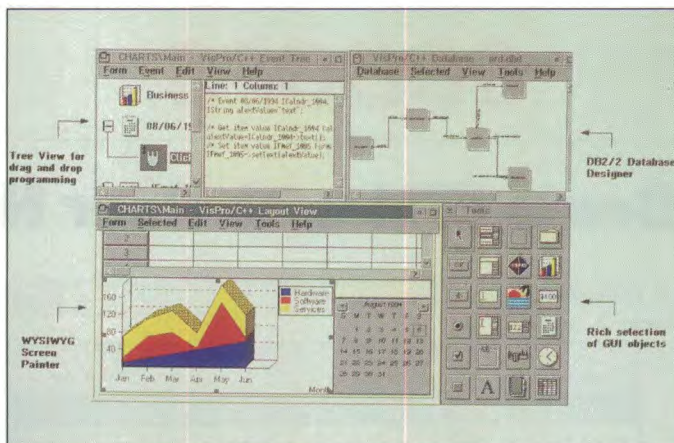
### New GUI tools from HockWare

HockWare Incorporated has shipped two new tools for developing GUIs for OS/2 applications. VisPro/C and VisPro/C++ are object oriented programming tools for IBM's CSet compilers and User Interface Class Library (VisPro/C++ includes a UICL browser).

Both products utilize drag and drop programming capabilities and are Workplace Shell compliant. Using either product, developers can work from multiple development views, including Layout, List, Event Tree, and Settings. The Build Options Editor allows programmers to visually set compiler and linker options, while a monitor feature enables users to observe their work in progress. Through the end of November, HockWare is offering each product for \$199. After Nov. 30, the products will be priced at \$399 each. HockWare, Inc. 315 N. Academy Street, Suite 100, Cary, NC 27513. (919) 380-0616, fax (919) 380-0757.

### A Sterling backup

Sterling Software is now shipping SAMS:Save 5.0 for OS/2, a backup and restore application designed to simplify various data recovery tasks. The product enables users to perform a two-disk install to recover OS/2's Workplace Shell, avoiding the



HockWare's SOM-based development tools feature drag and drop programming and Workplace Shell integration.

hassle of reinstalling 21 system disks. When performing a backup, the application automatically reviews your system, recommending the appropriate level of backup, which the user can accept or override. The product enables users to cross-restore OS/2 data, for example, to a DOS environment. It also supports the Presentation Manager and extended attributes, including long file names in both FAT and HPFS. The single user only product costs \$295. Sterling Software, 11050 White Rock Rd., Suite 100, Rancho Cordova, CA 95670. (800) 854-4011, fax (916) 635-5604.

### Rumba with your mainframe

Wall Data Inc. last month began shipping Rumba for the Mainframe, OS/2 version 3.0. This native 32 bit application enables OS/2 workstations to connect directly to IBM mainframes.

Transferring files between the PC and host is simplified with full drag and drop capability. Native support for Nov-

ell's NetWare for SAA and TCP/IP is provided, and a floating toolbar provides instant access to frequently used functions. The product also features a FastPath Utility, which walks the user through the configuration

and setup process. Rumba for the mainframe is priced starting at \$400.

Separately, Wall Data also released two other Rumba products for prototyping and distributing peer to peer SNA applications. Rumba Tools for APPC version 2.0 is used for cross-platform application development, and provides program-to-program communication across varying platforms that support the Common Programming Interface for Communications (CPI-C). Rumba APPC Client version 2.0 is a product that allows users to distribute APPC and CPI-C applications when 3270 or 5250 emulation is not required.

Tools for APPC sells for

### A Predator of an editor

For the latest in editors, check out Compuware Corporation's Predator/2, a graphical 32 bit code editor that ships with its own C-like extension language, compiler, and on-line debugger.

The product also includes its own source code, enabling users to change functions or add new ones. With the editor's Multiple Document Interface, programmers can view different files or different sections of the same file in separate windows. Programmers can also set the editor to emulate the commands and sequences of other editors including BRIEF, vi, CUA, Emacs, and ISPF. Predator/2

also works with PVCS and WorkFrame/2 and provides background execution of IBM, Borland, and Microsoft compilers. Through the end of this year, the product is priced at \$149. Compuware Corp., 31440 Northwestern Hwy., PO Box 9080, Farmington Hills, MI 48333. (313) 737-7300, fax (313) 737-2718.





## MARKETLINE

\$500, and the APPC Client sells for \$200. All prices are single user only. Wall Data Inc., 11332 N.E. 122nd Way, Kirkland, WA 98034. (800) 48-RUMBA, fax (206) 814-4323.

### One Tree for tracking

One Tree Software has released SourceSafe 3.0, its multiplatform version control software that allows the retrieval of files (ASCII and binary) at the proper revision

level for any stage of a project. These same files may also be shared among projects. SourceSafe also features a project-based security system and support for parallel development, allowing users to work

in tandem on the same file or project. Pricing starts at \$395, with multiplatform packs available. One Tree Software, PO Box 11639, Raleigh, NC 27604. (919) 821-2300, fax (919) 823-5222.

## News

### Bon Ami still for sale

Massachusetts-based Bon Ami Software remains on the block as President Allan Morris continues to hold out for the "right price."

Since its creation in 1991, the company has developed and distributed CPU Monitor Plus, an OS/2-based software utility that provides real time analysis of parameters ranging from resource utilization to disk and COM port activity.

Word that the company was entertaining offers surfaced in late summer. At that time, Morris confirmed he was looking to sell but that no firm offers had been made. By mid August, however, Bon Ami was talking with a U.S.-based software and consulting firm. At the time, Morris would say only that his asking price was in the high six figures and that both sides were negotiating.

In early September, though, Morris said the deal had fallen through. But he indicated that other companies, including Symantec Corp.'s Peter Norton Group, were still interested.

While Morris is anxious to sell, he acknowledges that for the moment many in the industry have taken a wait-

and-see attitude until first returns are in on the launch of IBM's new trimmed down version of OS/2.

### Vendor Council hires PR firm

Following a less than stellar retail campaign on behalf of its members, the OS/2 Vendor Council has for the first time retained a public relations firm.

San Francisco-based Interactive Public Relations was brought on in August following a council vote in July. Under the leadership of newly installed council President Scott Vouri, the group of independent software vendors found itself struggling to revitalize its marketing efforts as the high profile release of the new OS/2 approached.

For the moment, explains Marissa Verson of Interactive PR, the firm will focus on heightening awareness of the council and its software vendor members within the computer and mainstream press.

The council was last in the news when then-President Tony Pereira of Clear & Simple Inc. negotiated a deal with a number of software chains that got increased shelf expo-

sure and a day of special events involving council members' products.

That shelf space gradually disappeared, however, reportedly because of lower than expected sales. One council member confided to *OS/2 Professional* that "Egghead recently decided that some of the OS/2 products were not appropriate for all of its stores," and reported that several vendors had also lost shelf space in CompUSA due to low sales.

### OS/2 gains in Europe

As IBM spends millions of dollars here in the U.S. to recapture lost market share, Big Blue continues to make inroads abroad.

In Copenhagen earlier this year, IBM teamed up with Lotus Development Corp. to cement a deal with two large Dutch companies looking to standardize on OS/2. That effort involved the sale of some 10,000 OS/2 SmartSuites and an equal number of site licenses.

On the heels of that sale, IBM and Danish book publisher Munksgaard initiated a giveaway promotion geared toward Danish students. The

promotion was part of an effort by Munksgaard to spread the word that its bookstores now stock computer software. The bait was a free copy of OS/2 for Windows 3.1 to those possessing a valid student identification card.

For IBM, however, the goal was somewhat different—to gain converts in a region where more than 70 percent of PCs ship with Windows pre-installed. Despite that disparity, one survey released in Denmark last month indicates that overall IBM is number one in the Danish computer market. The survey, conducted annually by *Datatid* magazine, revealed that Big Blue's number one ranking is based on overall sales in Denmark and on the fact that IBM is that country's largest technology exporter.

The survey also showed that Compaq Computer Corp., currently number one in PC sales in the U.S., is eyeing the Dutch market as well. Compaq's sales there last year were up nearly 60 percent over the prior year, a rate of growth that has placed the company squarely in contention with IBM at number 20 in the Danish top 100. ♦



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Circle #254



# OS/2 Inter-Process Communication

## Exception Handling

BY CAREY GREGORY

**A**t first glance exception handling may not appear to belong in the category of inter-process communication—after all, its primary purpose has nothing to do with providing IPC mechanisms for communicating between application processes. Rather, the fundamental purpose of OS/2's exception management facility is error handling.

Nevertheless, IPC *does* provide certain IPC capabilities for application programs, and further aids IPC development efforts by managing application error handling, memory management, debugging, and asynchronous inter-process signals.

OS/2 defines two classes of exceptions. The first class is *system exceptions*, which includes both unexpected errors such as memory protection violations, and expected errors such as guard page exceptions (which are used to dynamically commit memory pages on demand). OS/2 provides default handlers for all system exceptions. In most cases, the handler responds by terminating the application.

The second class of exceptions is *user-defined exceptions*, which are exceptions defined and managed entirely by the application. The application programmer must supply the appropriate exception handlers for user defined exceptions; otherwise, OS/2's default handler will respond by terminating the application. An application raises user-defined exceptions through a call to **DosRaiseException()**.

Exceptions can be further divided into *synchronous* exceptions, which are exceptions caused by an action of the executing thread, and *asynchronous* exceptions, which are caused by an event external to the executing thread. Guard page exceptions and memory protection exceptions are both examples of synchronous exceptions since they are caused by the executing thread. A user pressing the **Ctrl-Break** keys or another process calling **DosKill-Process()** with the application's PID would be an example of an asynchronous exception.

### LISTING 1

#### EXCEPT.CPP

```
#define INCL_DOS
#include <os2.h>
#include <stdio.h>
#include <stdlib.h>

ULONG ExceptionHandler(EXCEPTIONREPORTRECORD
                        *pRepRec,
                        EXCEPTIONREGISTRATIONRECORD
                        *pRegRec,
                        CONTEXTRECORD *pContext,
                        void *pDispatcherContext);

static void PrintFlags(ULONG HandlerFlags);
static void PrintSeverity(ULONG ExceptionNum);
static void PrintCustFlag(ULONG ExceptionNum);
static void PrintFacility(ULONG ExceptionNum);
static void PrintException(EXCEPTIONREPORTRECORD
                           *pRepRec);
static void PrintExceptionInfo(ULONG ExceptionNum,
                               ULONG *ExceptionInfo);

static int Done = FALSE;

// Text descriptions for system exceptions

int main(int argc, char **argv)
{
    ULONG ulTimes;
    EXCEPTIONREGISTRATIONRECORD RegRec;

    // establish a handler
    RegRec.prev_structure = 0;
    RegRec.ExceptionHandler = (ERR)ExceptionHandler;
    DosSetExceptionHandler(&RegRec);

    // tell OS/2 to send ctrl-c/ctrl-break
    // signals to this process and
    // not to display exception popups
    DosSetSignalExceptionFocus(SIG_SETFOCUS,
                               &ulTimes);

    DosError(FERR_DISABLEEXCEPTION);

    // now wait...
```



## CODE CACHE

```
printf("\nPress <ctrl-break> 3 times to stop.\n\n");
while (!Done)
    DosSleep(5000);

// cause an exception

char *p = 0;
*p = 0;

return (0);
}

ULONG ExceptionHandler(EXCEPTIONREPORTRECORD
                        *pRepRec,
                        EXCEPTIONREGISTRATIONRECORD
                        *pRegRec,
                        CONTEXTRECORD *pContext,
                        void *pDispatcherContext)
{
    static int Count = 0;

    // print info

    printf("Exception at 0x%x: ",
           pRepRec->ExceptionAddress);
```

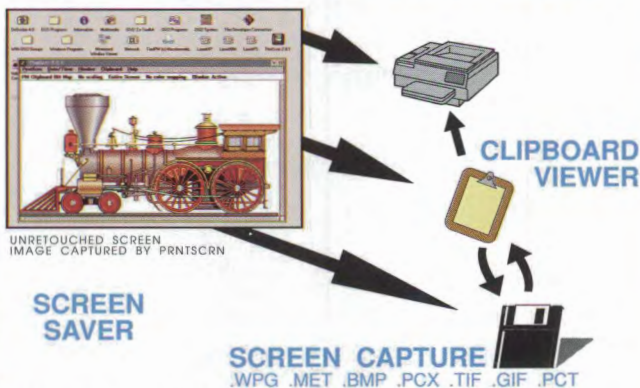
As you develop more sophisticated systems, you will find events that would be handled better by your own code than by the default exception handlers. To handle its own exceptions, an application must first register an exception handler. Once registered, the application may attempt to resolve the error and avoid termination (or at least terminate under more controlled circumstances). Upon registration, the system adds the function to the head of an exception handler chain—the exception handlers thus will be called in last-in-first-out (LIFO) order.

If you're familiar with DOS interrupt handling, this scheme will be familiar. It is the same basic approach used by DOS interrupt handlers, where the most recently registered handler runs first, followed by the original handlers, until one returns control to the system, indicating that the interrupt was handled.

### How OS/2 Dispatches Exceptions

When an exception occurs, the OS/2 exception dispatcher first saves the current machine context. If the

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## CODE CACHE

exception is a synchronous exception, the dispatcher locates the exception chain for the thread that caused the exception. However, if the system calls for a process termination, thread 1 is notified and terminated last, regardless of which thread made the call to **DosExit()** (thus providing a clean exit from the application).

If the exception is asynchronous, the dispatcher locates the exception chain for thread 1. If there is no exception chain, the system calls the default handler; otherwise, the system begins chaining through each handler as outlined earlier. If no handler indicates that it handled the exception, the default handler takes control. Under normal circumstances, this event chain will circumvent the system and keep your application running smoothly. However, if an exception is particularly serious—that is, it is considered non-continuable—any handler that attempts to manage the exception actually causes a second exception (**XCPT\_NONCONTINUABLE\_EXCEPTION**) giving OS/2 another

```
PrintException(pRepRec);
PrintExceptionInfo(pRepRec->ExceptionNum,
                  pRepRec->ExceptionInfo);
if (pRepRec->fHandlerFlags)
{
    printf(" Flags:");
    PrintFlags(pRepRec->fHandlerFlags);
}
printf("\n    Severity:      ");
PrintSeverity(pRepRec->ExceptionNum);
printf("\n    Facility Code:  ");
PrintFacility(pRepRec->ExceptionNum);
printf("\n    Customer Flag:  ");
PrintCustFlag(pRepRec->ExceptionNum);
printf("\n");
switch (pRepRec->ExceptionNum)
{
    // handle signals

    case XCPT_SIGNAL:
        switch (pRepRec->ExceptionInfo[0])
```

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Circle #85



## CODE CACHE

```
{
    // handle signal exceptions
    case XCPT_SIGNAL_INTR:
    case XCPT_SIGNAL_BREAK:
        DosBeep(500, 200);
        if (++Count >= 3)
            Done = TRUE;
        break;

    case XCPT_SIGNAL_KILLPROC:
        Done = TRUE;
        break;
}
DosAcknowledgeSignalException(pRepRec
    ->ExceptionInfo[0]);
return (XCPT_CONTINUE_EXECUTION);

// remove ourselves on termination
case XCPT_PROCESS_TERMINATE:
case XCPT_ASYNC_PROCESS_TERMINATE:
    DosUnsetExceptionHandler(pRegRec);
    break;
```

shot at terminating the wayward application.

### Registering Exception Handlers

Before starting to design an application that relies on exception handlers, note that you cannot install an exception handler in a Presentation Manager program. Although this is an unfortunate limitation, PM provides all of its own exception handling. Exception handling is thus limited to windowed and full-screen VIO applications.

To install an exception handler, the application program calls **DosSetExceptionHandler()**, with a pointer to an **EXCEPTIONREGISTRATIONRECORD** structure. While the structure is quite simple you should remember two important points. First, the variable must reside in the program's stack (it cannot be a global variable). Second, the first field of the structure, **prev\_struct**, is set by the operating system and must not be modified by the application. This field serves as a linked-list pointer, and modifying it would destroy the exception

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handler chain, with unpredictable results.

Listing 1 demonstrates a program with a simple exception handler. The main program begins by installing an exception handler via **DosSetExceptionHandler()**. It then instructs OS/2 to send all signals (Ctrl-c, Ctrl-Break, and calls to **DosKillProcess()** to the application's handler with the call to **DosSetSignalExceptionFocus()**. Without this call, signal exceptions would continue to be passed to OS/2's default handler.

The primary purpose of the handler shown in Listing 1 is to print the exceptions along with their associated parameters and flags. For this reason, the main program also calls **DosError()** to disable exception popups. Without this call, many exceptions would trigger the standard OS/2 exception popup (thus redundantly displaying the information printed by program).

### Writing an Exception Handler

The exception handler (**ExceptionHandler()** in Listing 1) is a function supplied by the application. After regis-

```
}  
// tell the system we didn't handle it  
return (XCPT_CONTINUE_SEARCH);  
}  
  
static void PrintFlags(ULONG HandlerFlags)  
{  
    if (HandlerFlags & EH_NONCONTINUABLE)  
        printf(" Non-continuable.");  
    if (HandlerFlags & EH_UNWINDING)  
        printf(" Unwinding.");  
    if (HandlerFlags & EH_EXIT_UNWIND)  
        printf(" Exit unwind.");  
    if (HandlerFlags & EH_STACK_INVALID)  
        printf(" Stack.");  
    if (HandlerFlags & EH_NESTED_CALL)  
        printf(" Nested.");  
    return;  
}  
  
static void PrintSeverity(ULONG ExceptionNum)  
{
```

# OS/2 UCSD

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## CODE CACHE

```
switch ((ExceptionNum & XCPT_SEVERITY_CODE)
    >> 30)
{
    case 0: printf("Success");          break;
    case 1: printf("Informational");    break;
    case 2: printf("Warning");         break;
    case 3: printf("Fatal Error");     break;
}
}
static void PrintCustFlag(ULONG ExceptionNum)
{
    if ((ExceptionNum & XCPT_CUSTOMER_CODE))
        printf("ON");
    else
        printf("OFF");
}
static void PrintFacility(ULONG ExceptionNum)
{
    ULONG FacilityNo;
    switch ((FacilityNo = ((ExceptionNum &
```

tration, all exceptions dispatched to the application's thread will be passed to the **ExceptionHandler()** function. The parameter of primary interest is the **EXCEPTIONREPORTRECORD**, which contains the **ExceptionNum** member. This element is an unsigned long `[[BK: string? number?]]` representing the exception number. Exception numbers are actually 32-bit values with the following fields:

Bits 31-30 contain a severity code, defined as follows:

Value	Meaning
00	Success
01	Informational
10	Warning
11	Error

Bit 29 is a customer code flag. If this bit is set, a user-defined exception is indicated.

Bits 28-16 contain a facility code. All OS/2-specific exceptions have a facility code equal to one. Exceptions that are platform-independent have a facility code of zero. OS/2 will generate exceptions with both of these

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## CODE CACHE

facility codes. If the customer code flag is set, this field should identify the application or subsystem that generated it, though it's not apparent from the OS/2 documentation how you should go about choosing a value. My suggestion would be to choose a large number to avoid duplicating an IBM-supplied value in the future.

Bits 15-0 contain an exception number specific to the facility. All exceptions generated by OS/2 are defined in **bsexcpt.h** with a named constant.

The print functions in Listing 1 document the contents and meaning of the fields in the **EXCEPTION-REPORTRECORD** structure. Of particular interest is the **ExceptionInfo** element. This is a variable-length array of 32-bit values containing parameters specific to each exception. The **PrintExceptionInfo()** function shown in Listing 1 documents the parameters passed in this array for the defined OS/2 system exceptions. For user-defined exceptions, this array may be of any length and may contain any information the designer chooses. The number of entries in the array is speci-


```

        XCPT_FACILITY_CODE) >> 16)))
{
    case 0:
        printf("Portable");
        break;
    case 1:
        printf("OS/2-Specific");
        break;
    default:
        printf("Unknown (0x%x)", FacilityNo);
        break;
}
}

static void PrintException(EXCEPTIONREPORTRECORD
                           *pRepRec)
{
    typedef struct _XCPT_DESCRIPTION
    {
        ULONG    Exception;
        char     *Description;
    } XCPT_DESCRIPTION;

```

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## CODE CACHE

```
static EXCPT_DESCRIPTION Descriptions[] =
{
    XCPT_GUARD_PAGE_VIOLATION,
    "Guard page violation",
    XCPT_UNABLE_TO_GROW_STACK,
    "Unable to grow stack",
    XCPT_DATATYPE_MISALIGNMENT,
    "Datatype misalignment",
    XCPT_BREAKPOINT, "Breakpoint",
    XCPT_SINGLE_STEP, "Single step",
    XCPT_ACCESS_VIOLATION, "Access violation",
    XCPT_ILLEGAL_INSTRUCTION,
    "Illegal instruction",
    XCPT_FLOAT_DENORMAL_OPERAND,
    "Floating point denormal operand",
    XCPT_FLOAT_DIVIDE_BY_ZERO,
    "Floating point divide by zero",
    XCPT_FLOAT_INEXACT_RESULT,
    "Floating point inexact result",
    XCPT_FLOAT_INVALID_OPERATION,
    "Floating point invalid operation",

```

fied in the **cParameters** element.

The remaining parameters to the exception handler are of interest primarily to the operating system (you may occasionally find they can be useful for debugging purposes). In general, the parameters passed to your handler should not be modified, although you may set the non-continuable bit in the **ffHandlerFlags** parameter (it is *not* permissible to clear it). Likewise, for continuable exceptions, you may modify the context contained in the **CONTEXTRECORD** parameter, although such operations are hazardous (you must understand OS/2 internals and your compiler thoroughly to make such changes correctly).

To investigate OS/2's exception handling, any number of errors may be intentionally invoked by the main program. The example in Listing 1 forces a protection violation by writing to a null pointer. You could further modify the example to create divide-by-zero errors, stack violations, and many others.

If you're feeling ambitious, you could also write a sec-

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## CODE CACHE

ond program that calls **DosKillProcess()** to terminate the example program while it's in its wait loop. This will generate a termination exception. Knowing how OS/2 handles each exception and actually seeing the series of exceptions that occurs is very instructive in understanding OS/2's inner workings.

Playing with exception handlers can actually add some wholesome entertainment to your programming chores; after all, it is far easier to write buggy code than clean. The preceding example will provide a useful starting point—I recommend downloading it from *OS/2 Professional's* conference on BIX (join [os2.pro/listings](http://os2.pro/listings)) and playing with it. Hopefully, you'll find working through the variations both informative and fun. ♦

*Carey Gregory is the president of Gateway Technologies Corporation of Canton, Connecticut, a consulting and software development firm specializing in OS/2 and NT. He can be reached via the Internet at [careyg@bix.com](mailto:careyg@bix.com) or on CompuServe at 71034,2205.*

```
XCPT_FLOAT_OVERFLOW,
"Floating point overflow",
XCPT_FLOAT_STACK_CHECK,
"Floating point stack check",
XCPT_FLOAT_UNDERFLOW,
"Floating point underflow",
XCPT_INTEGER_DIVIDE_BY_ZERO,
"Integer divide by zero",
XCPT_INTEGER_OVERFLOW,
"Integer overflow",
XCPT_PRIVILEGED_INSTRUCTION,
"Privileged instruction",
XCPT_IN_PAGE_ERROR,
"I/O error reading page",
XCPT_PROCESS_TERMINATE,
"Process terminate",
XCPT_ASYNC_PROCESS_TERMINATE,
"Asynchronous process terminate",
XCPT_NONCONTINUABLE_EXCEPTION,
"Non-continuable exception",
XCPT_INVALID_DISPOSITION,
```

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## CODE CACHE

```

    "Invalid disposition",
    XCPT_INVALID_LOCK_SEQUENCE,
    "Invalid lock sequence",
    XCPT_ARRAY_BOUNDS_EXCEEDED,
    "Array bounds exceeded",
    XCPT_B1NPX_ERRATA_02, "B1NPX errata 02",
    XCPT_UNWIND, "Unwinding",
    XCPT_BAD_STACK, "Bad stack",
    XCPT_INVALID_UNWIND_TARGET,
    "Invalid unwind target",
    XCPT_SIGNAL, "Signal received:",
    0, 0 // terminate list
};

for (EXCPT_DESCRIPTION *p = Descriptions;
     p->Exception; p++)
{
    if (p->Exception == pRepRec->ExceptionNum)
    {
        printf("%s", p->Description);
        return;
    }
}

printf("Unknown (0x%x)", pRepRec->ExceptionNum);
}

static void PrintExceptionInfo(ULONG ExceptionNum,
                               ULONG *ExceptionInfo)
{
    switch (ExceptionNum)
    {
        case XCPT_GUARD_PAGE_VIOLATION:
            // ExceptionInfo[ 0 ] - Access Code:
            // XCPT_READ_ACCESS
            // XCPT_WRITE_ACCESS
            // ExceptionInfo[ 1 ] - FaultAddr
            printf(" %s 0x%x",
                ExceptionInfo[0] == XCPT_READ_ACCESS ?
                "reading from" : "writing to",
                ExceptionInfo[1]);
            break;

            // Portable fatal hardware generated
            // exceptions

        case XCPT_DATATYPE_MISALIGNMENT:
            // ExceptionInfo[ 0 ] - Access Code:
            // XCPT_READ_ACCESS
            // XCPT_WRITE_ACCESS

```

```

            // ExceptionInfo[ 1 ] - Alignment
            // ExceptionInfo[ 2 ] - FaultAddr
            printf(" %s 0x%x, alignment=%u",
                ExceptionInfo[0] == XCPT_READ_ACCESS
                ?
                "reading from" : "writing to",
                ExceptionInfo[2],
                ExceptionInfo[1]);
            break;

        case XCPT_ACCESS_VIOLATION:
            // ExceptionInfo[ 0 ] - Access Code:
            // XCPT_READ_ACCESS
            // XCPT_WRITE_ACCESS
            // XCPT_SPACE_ACCESS
            // XCPT_LIMIT_ACCESS
            // XCPT_UNKNOWN_ACCESS
            // ExceptionInfo[ 1 ] - FaultAddr
            // XCPT_READ_ACCESS
            // XCPT_WRITE_ACCESS
            // Selector XCPT_SPACE_ACCESS
            // -1 XCPT_LIMIT_ACCESS
            switch (ExceptionInfo[0])
            {
                case XCPT_READ_ACCESS:
                    printf(" reading from 0x%x",
                        ExceptionInfo[1]);
                    break;

                case XCPT_WRITE_ACCESS:
                    printf(" writing to 0x%x",
                        ExceptionInfo[1]);
                    break;

                case XCPT_SPACE_ACCESS:
                    printf(" accessing selector
0x%x",
                        ExceptionInfo[1]);
                    break;

                case XCPT_LIMIT_ACCESS:
                    printf(" accessing stack");
                    break;

                case XCPT_UNKNOWN_ACCESS:
                default:
                    printf(" due to unknown
cause");
                    break;
            }
            break;
    }
}
break;

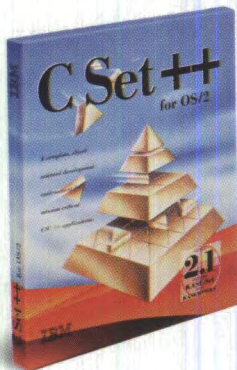
```



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## CODE CACHE

```
// Portable fatal software generated
// exceptions
case XCPT_IN_PAGE_ERROR:
    // ExceptionInfo[ 0 ] - FaultAddr
    printf(" fault at 0x%x",
        ExceptionInfo[0]);
    break;
case XCPT_ASYNC_PROCESS_TERMINATE:
    // ExceptionInfo[ 0 ] - TID of
    // 'terminator' thread
    printf(" by thread %u",
        ExceptionInfo[0]);
    break;
// Signal Exceptions
case XCPT_SIGNAL:
    // ExceptionInfo[ 0 ] - Signal Number
    switch (ExceptionInfo[0])
    {
        case XCPT_SIGNAL_INTR:
            printf(" control-c");
```

```
        break;
        case XCPT_SIGNAL_KILLPROC:
            printf(" process killed");
            break;
        case XCPT_SIGNAL_BREAK:
            printf(" control-break");
            break;
        default:
            printf(" (unknown)");
            break;
    }
    break;
}
printf(".");
}
```

### LISTING 2

#### MAKE FILE FOR LISTING 1

```
except.exe: except.obj
    link386 /de /pmttype:vio except.obj;
except.obj:  except.cpp
    icc /c /Q+ /Ti /O- /Gm+ except.cpp
```



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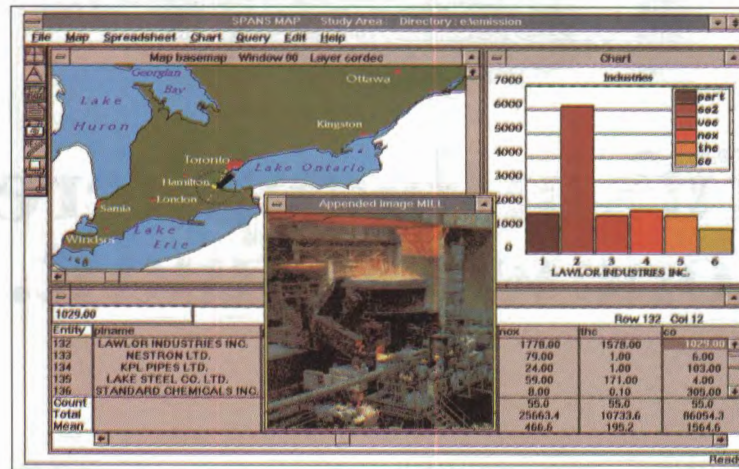
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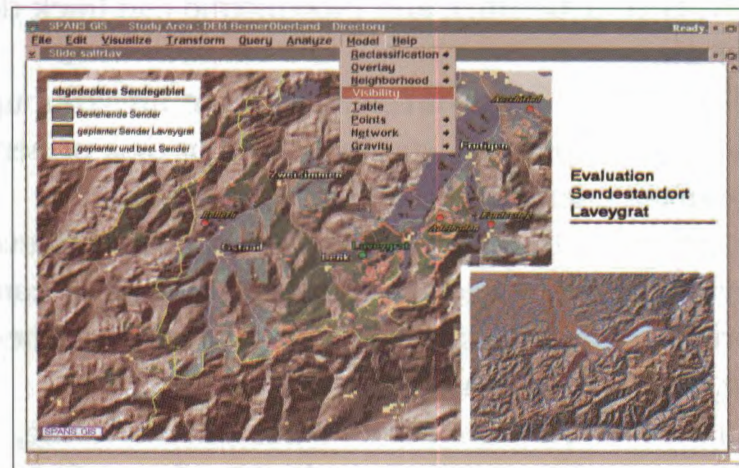
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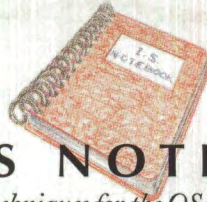
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# THE IS NOTEBOOK

*Tips and Techniques for the OS/2 Professional*

## A Journey of a Billion Miles...

BY GORDON SCOTT AND GENE STEELE

If OS/2 2.1 got you up and running, version 3.0 will lift you into orbit. OS/2 Warp will open a whole new world of personal computing productivity.

Like any interplanetary travel, the starting point for this journey is the launch pad. OS/2 Warp comes loaded with bonus applications, but its most prominent standard feature is a small, powerful addition to the Workplace Shell appropriately dubbed the "LaunchPad." The LaunchPad looks like an icon-filled button bar unconnected to any window. You can use it to start applications or to switch to running applications.

You can rapidly add new objects to the LaunchPad, modify the order of its contents, or remove items from the LaunchPad—all by means of drag and drop. It won't take you long to see how using this new feature will help you reclaim space on your OS/2 desktop and simplify the way you switch among applications. This month's tips are designed to give you ideas for using the LaunchPad effectively. If you haven't upgraded to OS/2 Warp, keep these tips handy until then.

### Use the LaunchPad as a floating task switcher for your most frequently used applications.

- Select the LaunchPad icon on your OS/2 Warp desktop with the right mouse button (this displays the pop-up menu for the LaunchPad).
- Open the Settings Notebook from the pop-up menu. (Settings is now the second item on the pop-up menu instead

of the first item on a cascading secondary menu.)

- Select the checkbox labeled **Float on top**.
- Select the checkbox labeled **Hide frame controls**.
- Select the checkbox labeled **Display text in Drawers**.
- Be sure all other checkboxes are not selected.
- Close the Settings Notebook.
- Put your four most frequently used applications on the LaunchPad, and place all other applications or folders in the drawers (the thin buttons directly above the main icons).

If you set the options as outlined in the directions, the LaunchPad will display in front of any window on the screen. This can be annoying if the LaunchPad itself is too large (you can disable this feature by removing the **Float on top** option).

A floating LaunchPad is less annoying when kept small. However, it would lose effectiveness if too small (because the buttons would be more difficult to hit). By limiting the buttons to four or five items, you can strike an effective balance between small overall size and relatively large buttons.

Of course, limiting yourself to four or five icons imposes additional limits. You may have a dozen or so commonly used icons by the time you count multiple drives, printers, utilities, and a suite of core applications. These icons can be placed in the LaunchPad drawers. Drawers are opened or closed using the thin buttons just above each main icon on the LaunchPad. When selected, a drawer displays another button bar sim-

ilar to the main LaunchPad bar. **Note:** the **Settings** menu item is no longer on the cascaded menu next to the **Open** selection. Although this will take a bit of relearning on the part of long-time OS/2 users, the frequency of settings changes makes the new location far more convenient.

### Use the LaunchPad as a ready-at-hand application starter.

- Open the Settings Notebook for the LaunchPad.
- Select the checkbox labeled **Float on top**.
- Select the checkbox labeled **Hide frame controls**.
- Select the checkbox labeled **Display vertical**.
- Select the checkbox labeled **Small icons**.
- Be sure the other checkboxes are *not* selected.
- Close the Settings Notebook.
- Position the LaunchPad to the left side of the screen.
- Place ten or more application icons that you want to start every time you select them (items like the OS/2 command prompt, a DOS window, the system editor, the Seek and Scan files object, and so forth).
- Open the settings for the system editor that you have placed on your LaunchPad.
- Select the Window tab on the Settings Notebook
- Select the radio button labeled **Create new window**.



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## THE IS NOTEBOOK

- Repeat the last three steps for each applicable object on the LaunchPad.

This gives you an application starter always standing by for you to use to start a small process. Rather than starting a few key windows for major applications, this configuration allows multiple copies of single windows for running many small jobs that you frequently open, work on, then quickly close.

For major applications, you would simply start the applications and keep them running constantly in the background (using the Window list to navigate among them). This setup keeps the LaunchPad as small as possible. ♦

*Gordon Scott and Gene Steele collaborated to bring you this information. Gordon and Gene both work for different divisions of IBM located in San Jose, California. Gordon can be reached via Internet by sending e-mail to gscott@stlvm22.vnet.ibm.com. Gene can be reached at steele@netcom.com.*

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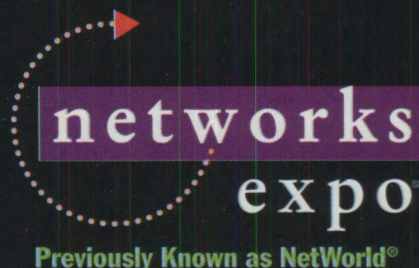
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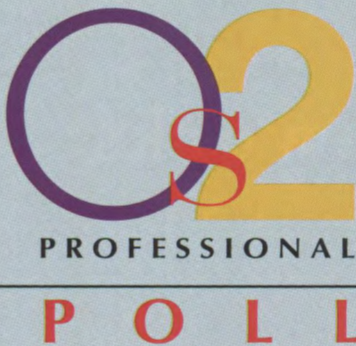


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**W**elcome back to the OS/2 Poll. This month, we're once again asking your opinions about the Warp launch. In fact, we're asking the *same questions* for three months, from October through December, to gauge the ups and downs of IBM's campaign. Even if you answered these questions last month, we'd like you again to fax this survey back to us at (301) 770-1720. We'll publish the results in a forthcoming issue. Thanks for participating.

## SURVEY #3

We'd like to know your thoughts on pressing issues facing OS/2.

### 1. How much have you seen or heard about IBM's launch of OS/2 Warp Version 3?

- ☐ a great deal      ☐ very little      ☐ none (please move on to question #4)

### 2. Through which media have you seen or heard advertising about the new product?

(please check all that apply)

- ☐ TV      ☐ Radio      ☐ Newspaper      ☐ Magazines  
☐ Billboards      ☐ Direct Mail      ☐ Other (please specify) \_\_\_\_\_

### 3. So far, what has this advertising and publicity motivated you to do?

- ☐ Seek out more information      ☐ Decide to buy it      ☐ Nothing      ☐ My decision to buy was made *before* seeing any advertising

### 4. What do you think of the name, "OS/2 Warp"?

- ☐ I love it!      ☐ It's OK      ☐ I hate it      ☐ No opinion

### 5. What version of OS/2 are you currently using?

- ☐ Pre-1.3      ☐ 1.3      ☐ 2.0      ☐ 2.1/2.11      ☐ OS/2 for Windows

### 6. When do you plan to upgrade your OS/2 system to Warp?

- ☐ October '94      ☐ November '94      ☐ December '94      ☐ First half of 1995  
☐ Second half of 1995      ☐ I won't make that decision until the release of Windows 95      ☐ I have no plans to upgrade to Warp

### 7. Which of the following features is the *most* important to you?

- ☐ One-button install      ☐ Internet access      ☐ IBM Works  
☐ Reduced memory requirements      ☐ None of these features is important to me

Please tell us about yourself:

### Do you subscribe to OS/2 Professional?

- ☐ yes      ☐ no

### How many employees are in your company?

- ☐ 1-5      ☐ 6-10      ☐ 11-50      ☐ 51-100  
☐ 101-500      ☐ 501-1000      ☐ 1000+

### Title (check all that apply)

- ☐ Chairman, president, owner, partner      ☐ VP, financial officer, treasurer, controller      ☐ Manager, supervisor      ☐ MIS/DP specialist  
☐ Communications/Network specialist      ☐ Microcomputer specialist      ☐ Systems analyst      ☐ Computer consultant  
☐ Programmer/programmer analyst      ☐ Computer educator      ☐ Professional  
☐ Other (specify) \_\_\_\_\_

### Which best describes your company? (check all that apply)

- ☐ Non-computer manufacturing      ☐ Computer manufacturing      ☐ Retail, wholesale      ☐ Computer-related services  
☐ Finance, insurance, real estate      ☐ Government, military, aerospace      ☐ Non-profit      ☐ VARS, consultants  
☐ Non-computer-related services      ☐ Communication, printing, publishing      ☐ Health, medical, legal      ☐ Education, scientific, R&D  
☐ Utility, transportation      ☐ Other (specify) \_\_\_\_\_

Please fax completed survey to (301) 770-1720



## BYTE's OS/2 Programmer's Cookbook

by Kathy Ivens and Bruce Hallberg, Osborne McGraw-Hill, \$34.95, 255 pages

REVIEWED BY ERIC P. CARTER

**B**YTE's *OS/2 Programmer's Cookbook* serves up a spicy mixture of tools and utilities for both the serious and the weekend code chef. The book is sprinkled with helpful tips and bits of humor, which makes learning about these programs an entertaining task. Its centerpiece, though, is a CD-ROM with more than 200 software files containing tools, utilities, bitmaps, thousands of icons, and lots of power user lore.

The layout of the book is creative and visually appealing, but I also found it distracting—I kept expecting to see title headings as well as the graphics the authors use to introduce each software package.

The appendices contain a nice listing of OS/2-specific user-groups and BBSs around the world, hints on marketing your own shareware programs, and a listing of the files contained on the CD-ROM, most of which are described in the book. Unfortunately, some of the files listed are not on the disk. I was especially disappointed not to get the bitmaps of Yoda wearing sunglasses or the Starship *Enterprise* from *Star Trek: The Next Generation*. The programs on the CD-ROM are organized according to the chapters of the book, with directory names like \chap8. While this helps keep the book and CD-ROM in synch, it's not very useful for remembering where a particular package can be found.

For programmers, there are samples of C and REXX code to create more powerful Workplace Shell objects (like multi-column list boxes), a basic introduction to SOM and custom controls, specialized text editors, and other programming paraphernalia.

Is there anything in this package for the non-programmer? Funny you should ask. As the headline on the book's preface pro-

claims, "This Book Is Not Just for Programmers." In fact, the CD is full of fun and useful programs that any OS/2 user will enjoy.

Here are just a few of my favorites:

- Do you lose track of files and applications even though your screen is filled with icons? Group Folder (GFOLDER.ZIP) can help you organize that messy desktop. Group Folder creates a new

kind of folder for your desktop that has group subsections within it. When you open a Group Folder, you always see the names of all of the subsections. To see the contents of one of the subsections, you double-click on its icon. You have to install the program for yourself to see how elegantly it works. For me, OS/2 now boots much faster since I keep only five objects on my desktop, three of them group folders.

- Did you ever wonder what all that stuff in your CONFIG.SYS file means? OS2CFG52.ZIP will tell you. Just unzip it with one of the many zip/unzip utilities included on the disk.

- Tired of that plain-looking mouse cursor? Now you can show your true colors with a more personalized pointer. Mousey (MOUSEY10.ZIP), a shareware program, lets you choose from an assortment of images including an American flag, a smiley face, and a mouse.

Be sure to check out the Compact Disk Digital Audio Explorer (CDEXPL.ZIP). It has a much better interface than the CD player that comes with MMPM, and it gives you the ability to do things like randomly play all of the songs on your favorite CD. If that's not enough, you can also use it as a detailed catalog of your CD collection, since it can store information about each track on a CD.

The disk even has information on how to do things that you





## BOOKSTAX

supposedly cannot do, like installing the dual boot feature after you have already installed OS/2 without it. (If you are going to try something like this, remember to use one of the backup utilities on the disk first.)

I expected that an OS/2 CD-ROM would use an OS/2 program to help the user browse and install the contents. Alas, not this one. Instead it has a couple of character-based command files which help perform these functions. While they do the job, they are not very impressive. The disk does have a Windows program to do the same thing, but it would not run on my machine.

When I tried to use it, the program expressed a strong objection to my video display and then closed itself.

Despite a few glitches, *The Programmer's Cookbook* presents an appetizing menu. If you're looking for a collection of tools to help make you a more effective OS/2 programmer—or, for that matter, just a more impressive OS/2 user—this disk/book combo deserves your attention. ♦

Eric P. Carter writes on-line help and user manuals at IBM's Santa Teresa Laboratory. He can be reached via e-mail at [epic@vnet.ibm.com](mailto:epic@vnet.ibm.com).

# OS/2 PRESENTATION MANAGER PROGRAMMING

by Charles Petzold, Ziff-Davis Press, 934 pages, \$29.95

REVIEWED BY KEVIN McBRIDE

**C**harles Petzold has a history with OS/2. So does his book. *OS/2 Presentation Manager Programming* has its roots in OS/2 1.1, where the Presentation Manager first made its halting debut in 1987. Reminiscing, Petzold describes running PM programs from the OS/2 command line, then having to reboot because the graphical environment would not go away. Sounds ugly.

Thankfully, OS/2 and PM have come a long way since then.

Petzold has updated his book to keep up with the changes, but it is still a basic introduction to PM for C programmers. Actually, much of the book goes beyond basics, but not as far as SOM and the Workplace Shell, sticking to what Petzold calls "classical" PM programming.

Part one, with its set of seven progressively more complex Welcome programs, is a very lucid introduction to PM and event driven programming. But I did find one significant error. Petzold writes that object windows—invisible windows used for a variety of special purposes—have no parent. Not true. Just as the desktop window is the parent of all top-level frame windows, the desktop object window is the parent of all

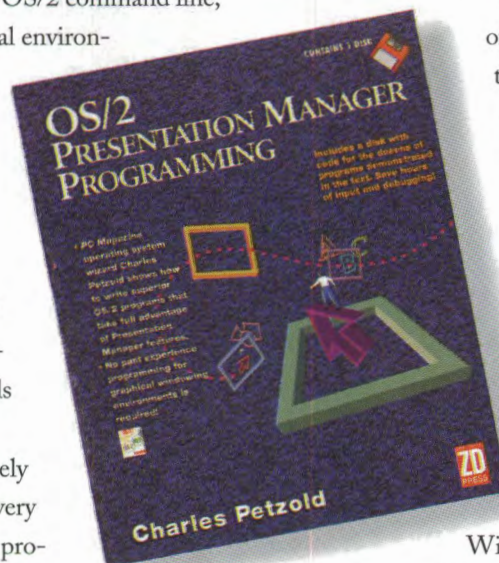
object windows. Sometimes you can find an object window only by looking at the children of the desktop object, so this is not a nit. Nonetheless, I generally found the information accurate, and patiently presented.

Part two, a fairly comprehensive overview of PM graphics programming (the GPI functions) titled "Painting the Client Window," consumes a third of the book. Easily a book in its own right, it is appropriate even for advanced PM programmers. And it overflows with sample programs.

My PM programming mentor once said, "There was only one original PM program. Everything since has been cut and paste." The event driven nature of PM makes it very modular, allowing you to work from templates and reuse chunks of code.

With 99 sample programs on an included diskette, Petzold offers a lot to cut and paste, with the author's blessing.

Almost every significant topic in the book is illustrated with a sample program. The samples tend to be small, seldom more than 100 lines of code, but on the diskette each includes an exe-





## BOOKSTAX

cutable version and source with make file. So it's easy to experiment with the samples, changing them to test different options.

I like the way Petzold starts with a simple sample, points out its weaknesses, then gives a more advanced version remedying those weaknesses. For example, he enhances the standard window procedure with code for improving scrolling performance, sizing the scroll bar slider for a visual cue of document size, and painting the client while scrolling. This is all useful and easily reusable code.

However, the samples are intended more for education than reuse. In fact, Petzold's approach is to lead the reader into an understanding of basic concepts and how things work, rather than to get you quickly into creating applications.

Part three addresses keyboard and mouse input, as well as using timers. Part four fills in program infrastructure with resources, controls, and dialogs, and part five gives examples of using the clipboard, DLLs, multithreading, and printing.

Petzold thoroughly and effectively covers his chosen topics, but some important topics are ignored. The PM offers a wide variety of GUI functions through standard interface controls; notebooks, containers, multiline edit fields, combo boxes, sliders, and spin buttons are some of the most useful. I would expect a book this size to discuss these at some length and give samples, but they are mentioned only on one page.

Perhaps Petzold considers these advanced topics. I don't. It makes more sense to use the standard controls than to do it yourself in the client window, especially for beginning programmers. And if a standard control doesn't do exactly what you want, you can change its behavior with subclassing. They involve less code, less time, and fewer bugs, and deserve more attention in this book.

Another big topic overlooked is online help. The OS/2 help manager has a rich API, including dynamic data formatting, that makes it practically an application development tool. But even if you don't use this function, every application should have some context-sensitive help.

Even with these shortcomings, if you are a C programmer seeking to learn PM, I'd recommend *OS/2 Presentation Manager Programming* for a comprehensive introduction. But find another source to introduce you to the standard controls. They're easier than you think—and you don't have to reinvent the wheel. ♦

Kevin McBride is a programmer, writer, and usability engineer in Human Factors at the IBM Santa Teresa Laboratory in California. He can be reached on the Internet at [aloysius@vnet.ibm.com](mailto:aloysius@vnet.ibm.com).

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# Through the Looking Glass

BY JERRY POURNELLE

**D**ue to a bizarre accident I am typing this with one hand. It's the first time I've wished for a good pen based system that understands my handwriting, since I can push a pencil faster than I can do this. Fortunately the condition is temporary.

Typing one-handed produces a number of errors; one of them is accidentally striking the Alt key. In a DOS system this is a problem or not depending on the application. In a windowed DOS app on an OS/2 system, though, it's always a problem, since the Alt key calls up the OS/2 window's menu. Then you must take hold of the mouse, move the cursor back into the app, and click; alternatively, escape fixes it. But one-hand typing requires me to look at the keys, not the screen, so I don't always know I've done it. (Incidentally, Microsoft Word has a smaller version of the same problem.)

The big news this month has been the new OS/2, which understands Windows for Workgroups, and Microsoft's announcement that Chicago, renamed Windows 95, won't ship until '95. This opens a window of opportunity for IBM; one hopes they'll jump through it.

Meanwhile, a European engineering group, As Norsk Enok Automatikk, has sent me a long description of how to automate your house using a PC, resulting in lower insurance costs as well as greater convenience. The key is a preemptive multitasking system, since it has to monitor many things, including fire safety, at the same time, and may also have to perform several tasks at once. The company calls it OS/2 at Home and is developing this system on OS/2. Other such schemes are being developed in the U.S.

Can IBM structure itself to deal with a home market? There's ample reason to doubt it. It certainly hasn't been able to evolve a structure to deal with small business. As an example, it's a major undertaking for me just to get an IBM press representative on the phone. I always budget at least an hour, and give it about a 50

percent chance of success. The usual result is an endless loop of talking with machines and the impression that IBM no longer has any human employees. My guess is that wouldn't happen if someone from GM wanted to talk to them.

The dozen or so press relations firms employed by IBM have much the same situation, and all their employees are generally in meetings, leaving none to relate with the press. So it goes.

My point is hardly a new one, but unfortunately not yet an out of date one. It takes determination to find out things from IBM, even when you're sympathetic (or even a potential customer).

Microsoft, by contrast, doesn't take any such chances. Microsoft and its PR firm actively pursue press people who deal with small business and home markets.

I think it comes from corporate history: Microsoft began with small customers and grew from there, while IBM built its success in the big corporate world. In the 1970s I tried to buy an IBM system for Pepperdine University where I was director of the Research Institute. They were nice enough, but it was clear that we were a very small fish.

Since then IBM itself has gotten smaller. But still, can today's Big Blue deal with a middle sized high school? Or home markets? Its advertising campaign for Warp suggests it means to. But that's Ogilvy & Mather's line; how deep into those 200,000-plus employees has IBM signed onto this new market?

We'll see. Technically, OS/2 remains a superior product. It's not as user friendly as Windows and it lacks a simple and inexpensive networking system. Talk Quarterdeck into making its Sidebar user interface work with OS/2 and the first is fixed; and I understand Artisoft has the second well in hand with its new release of LANtastic for OS/2.

IBM once again has a window of opportunity. So long as you don't hit the Alt key. ♦







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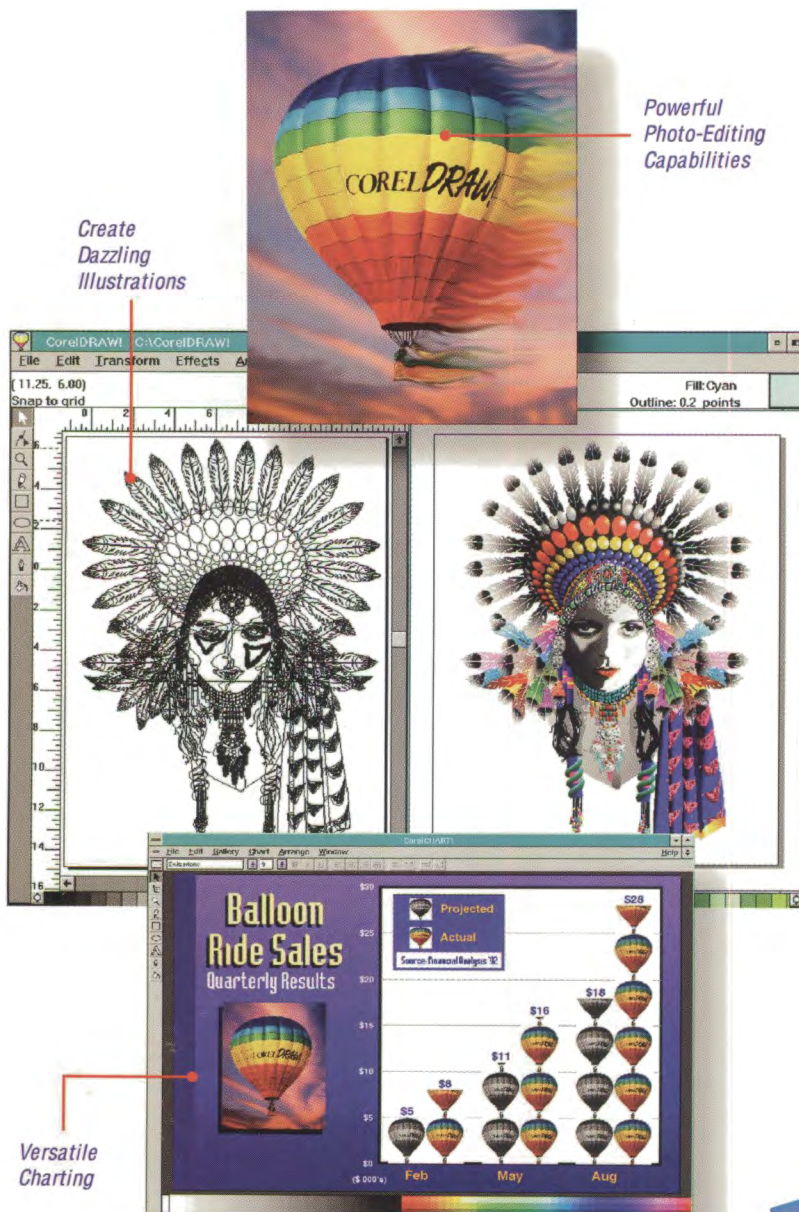
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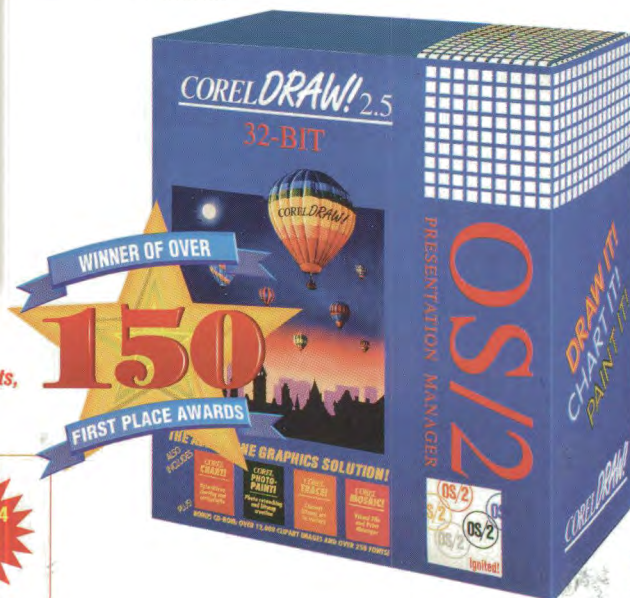
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